

SEQUENCE LISTING

<110> Chishti, Athar
Oh, Steven
Liu, David
Goel, Vikas
Li, Xuerong

<120> Band 3 Antigenic Peptides, Malaria Polypeptides and Uses Thereof

<130> S1237/7019

<150> US 06/272,930

<151> 2001-03-02

<160> 59

<170> PatentIn version 3.0

<210> 1
<211> 20
<212> PRT
<213> Homo sapiens

<400> 1

Gly Met Pro Trp Leu Ser Ala Thr Thr Val Arg Ser Val Thr His Ala
1 5 10 15

Asn Ala Leu Thr
20

<210> 2
<211> 20
<212> PRT
<213> Homo sapiens

<400> 2

Ser Val Thr His Ala Asn Ala Leu Thr Val Met Gly Lys Ala Ser Thr
1 5 10 15

Pro Gly Ala Ala
20

<210> 3
<211> 20
<212> PRT
<213> Homo sapiens

<400> 3

Gly Lys Ala Ser Thr Pro Gly Ala Ala Ala Gln Ile Gln Glu Val Lys
1 5 10 15

Glu Gln Arg Ile
20

<210> 4
<211> 20

<212> PRT
<213> Homo sapiens

<400> 4

Asp Arg Ile Leu Leu Leu Phe Lys Pro Pro Lys Tyr His Pro Asp Val
1 5 10 15

Pro Tyr Val Lys
20

<210> 5
<211> 3475
<212> DNA
<213> Homo sapiens

<400> 5
ggaacgagtg ggaacgtagc tggtcgcaga gggcaccagc ggctgcagga cttcaccaag 60
ggaccctgag gctcgtgagc agggacccgc ggtgcggggt atgctggggg ctgagatcac 120
cgtagacaac tggacactca ggaccacgcc atggaggagc tgcaggatga ttatgaagac 180
atgatggagg agaactctga gcaggaggaa tatgaagacc cagacatccc cgagtcccag 240
atggaggagc cggcagctca cgacaccgag gcaacagcca cagactacca caccacatca 300
caccgggta cccacgaggt ctatgtggag ctgcaggagc tggatgatga cgaaaagaac 360
caggagctga gatggatgga ggccggcgcc tgggtgcaac tggaggagaa cctgggggag 420
aatggggcct ggggcccgcg gcacctctct cacctcacct tctggagcct cctagagctg 480
cgtagagtct tcaccaaggg tactgtcctc ctagacctgc aagagacctc cctggctgga 540
gtggccaacc aactgctaga caggtttatc tttgaagacc agatccggcc tcaggaccga 600
gaggagctgc tccgggcccct gctgcttaaa cacagccacg ctggagagct ggaggccctg 660
gggggtgtga agcctgcagt cctgacacgc tctggggatc cttcacagcc tctgctcccc 720
caacactcct cactggagac acagctcttc tgtgagcagg gagatggggg cacagaaggg 780
cactcaccat ctggaattct ggaaaagatt ccccgaggatt cagaggccac gttggtgcta 840
gtgggcccgc ccgacttcct ggagcagccg gtgctgggct tcgtgaggct gcaggaggca 900
gaggagctgg aggcggtgga gctgccggtg cctatacgtc tcctctttgt gttgctggga 960
cctgaggccc cccacatcga ttacaccag cttggccggg ctgctgccac cctcatgtca 1020
gagaggggtgt tccgcataga tgcctacatg gctcagagcc gaggggagct gctgcactcc 1080
ctagagggct tcctggactg cagcctagtg ctgcctccca ccgatgcccc ctccgagcag 1140
gcactgctca gtctggtgcc tgtgcagagg gagctacttc gaaggcgcta tcagtccagc 1200
cctgccaaag cagactccag cttctacaag ggccctagact taaatggggg cccagatgac 1260
cctctgcagc agacaggcca gctcttcggg ggccctggtgc gtgatatccg gcgccgctac 1320

ccctattacc	tgagtgacat	cacagatgca	ttcagcccc	aggtcctggc	tgccgtcatc	1380
ttcatctact	ttgctgcact	gtcaccgcgc	atcaccttcg	gcggcctcct	gggagaaaaag	1440
acccggaacc	agatgggagt	gtcggagctg	ctgatctcca	ctgcagtgca	gggcattctc	1500
ttcgccctgc	tgggggctca	gcccctgctt	gtggctggct	tctcaggacc	cctgctggtg	1560
tttgaggaag	ccttcttctc	gttctgcgag	accaacggtc	tagagtacat	cgtgggcccgc	1620
gtgtggatcg	gcttctggct	catcctgctg	gtggtggttg	tgggtggcctt	cgagggtagc	1680
ttcctgggtcc	gcttcatctc	ccgctatacc	caggagatct	tctccttctc	catttccctc	1740
atcttcatct	atgagacttt	ctccaagctg	atcaagatct	tccaggacca	cccactacag	1800
aagacttata	actacaacgt	gttgatggtg	cccaaaccctc	agggccccct	gccaacaca	1860
gcccctctct	cccttggtgt	catggccggt	accttcttct	ttgccatgat	gctgcgcaag	1920
ttcaagaaca	gtcctatatt	ccctggcaag	ctgogtcggg	tcatcgggga	cttcgggggtc	1980
cccatctcca	tcctgatcat	ggctcctggg	gatttcttca	ttcaggatac	ctacaccag	2040
aaactctcgg	tgctgatgg	cttcaagggt	tccaactcct	cagccccggg	ctgggtcatc	2100
caccactgg	gcttgcggtc	cgagtttccc	atctggatga	tgtttgcttc	cgccctgcct	2160
gctctgctgg	tcttcatcct	catattcctg	gagtctcaga	tcaccacgct	gattgtcagc	2220
aaacctgagc	gcaagatggt	caagggtccc	ggcttccacc	tggacctgct	gctggtagta	2280
ggcatgggtg	gggtggccgc	cctctttggg	atgccctggc	tcagtgccac	caccgtgcgt	2340
tccgtcacc	atgccaacgc	cctcactgtc	atgggcaaag	ccagcacc	aggggctgca	2400
gcccagatcc	aggagggtcaa	agagcagcgg	atcagtggac	tcctggctgc	tgtgcttgtg	2460
ggcctgtcca	tcctcatgga	gcccacctg	tcccgcatcc	ccctggctgt	actgtttggc	2520
atcttctct	acatgggggt	cagctcgctc	agcggcatcc	agctctttga	ccgcatcttg	2580
cttctgttca	agccacccaa	gtatcaccca	gatgtgccct	acgtcaagcg	ggtgaagacc	2640
tggcgcatgc	acttattcac	gggcatccag	atcatctgcc	tggcagtgct	gtgggtggtg	2700
aagtccacgc	cggcctccct	ggccctgccc	ttcgtcctca	tcctcactgt	gccgctgcgg	2760
cgcgtcctgc	tgccgctcat	cttcaggaac	gtggagcttc	agtgtctgga	tgctgatgat	2820
gccaaggcaa	cctttgatga	ggaggaaggt	cgggatgaat	acgacgaagt	ggccatgcct	2880
gtgtgagggg	cgggcccagg	ccctagacct	tccccacca	ttccacatcc	ccaccttcca	2940
aggaaaagca	gaagtctcat	ggcacctcat	ggactccagg	atcctcctgg	agcagcagct	3000
gaggccccag	ggctgtgggt	ggggaaggaa	ggcgtgtcca	ggagaccttc	cacaaagggt	3060
agcctggctt	ttctggctgg	ggatggccga	tggggcccac	attaggggggt	ttgttgacaca	3120

gtccctcctg ttgccacact ttcactgggg atcccgtgct ggaagactta gatctgagcc 3180
 ctccctcttc ccagcacagg caggggtaga agcaaaggca ggaggtgggt gagcgggtgg 3240
 ggtgcttgct gtgtgacctt gggcaagtcc cttgaccttt ccagcctata tttcctcttc 3300
 tgtaaaatgg gtatattgat gataataccc acattacagg atgggttactg aggaccaaag 3360
 atacatgtaa aatagggcct tgtaaactcc acagggactg ttctatagca gtcattcattt 3420
 gtctttgaac gtacccaagg tcacatagct gggatttgaa ctgagccgtg cagct 3475

<210> 6
 <211> 911
 <212> PRT
 <213> Homo sapiens

<400> 6

Met Glu Glu Leu Gln Asp Asp Tyr Glu Asp Met Met Glu Glu Asn Leu
 1 5 10 15
 Glu Gln Glu Glu Tyr Glu Asp Pro Asp Ile Pro Glu Ser Gln Met Glu
 20 25 30
 Glu Pro Ala Ala His Asp Thr Glu Ala Thr Ala Thr Asp Tyr His Thr
 35 40 45
 Thr Ser His Pro Gly Thr His Glu Val Tyr Val Glu Leu Gln Glu Leu
 50 55 60
 Val Met Asp Glu Lys Asn Gln Glu Leu Arg Trp Met Glu Ala Ala Arg
 65 70 75 80
 Trp Val Gln Leu Glu Glu Asn Leu Gly Glu Asn Gly Ala Trp Gly Arg
 85 90 95
 Pro His Leu Ser His Leu Thr Phe Trp Ser Leu Leu Glu Leu Arg Arg
 100 105 110
 Val Phe Thr Lys Gly Thr Val Leu Leu Asp Leu Gln Glu Thr Ser Leu
 115 120 125
 Ala Gly Val Ala Asn Gln Leu Leu Asp Arg Phe Ile Phe Glu Asp Gln
 130 135 140
 Ile Arg Pro Gln Asp Arg Glu Glu Leu Leu Arg Ala Leu Leu Leu Lys
 145 150 155 160
 His Ser His Ala Gly Glu Leu Glu Ala Leu Gly Gly Val Lys Pro Ala
 165 170 175
 Val Leu Thr Arg Ser Gly Asp Pro Ser Gln Pro Leu Leu Pro Gln His
 180 185 190
 Ser Ser Leu Glu Thr Gln Leu Phe Cys Glu Gln Gly Asp Gly Gly Thr
 195 200 205

Glu	Gly	His	Ser	Pro	Ser	Gly	Ile	Leu	Glu	Lys	Ile	Pro	Pro	Asp	Ser	210	215	220
Glu	Ala	Thr	Leu	Val	Leu	Val	Gly	Arg	Ala	Asp	Phe	Leu	Glu	Gln	Pro	225	230	235
Val	Leu	Gly	Phe	Val	Arg	Leu	Gln	Glu	Ala	Ala	Glu	Leu	Glu	Ala	Val	245	250	255
Glu	Leu	Pro	Val	Pro	Ile	Arg	Phe	Leu	Phe	Val	Leu	Leu	Gly	Pro	Glu	260	265	270
Ala	Pro	His	Ile	Asp	Tyr	Thr	Gln	Leu	Gly	Arg	Ala	Ala	Ala	Thr	Leu	275	280	285
Met	Ser	Glu	Arg	Val	Phe	Arg	Ile	Asp	Ala	Tyr	Met	Ala	Gln	Ser	Arg	290	295	300
Gly	Glu	Leu	Leu	His	Ser	Leu	Glu	Gly	Phe	Leu	Asp	Cys	Ser	Leu	Val	305	310	315
Leu	Pro	Pro	Thr	Asp	Ala	Pro	Ser	Glu	Gln	Ala	Leu	Leu	Ser	Leu	Val	325	330	335
Pro	Val	Gln	Arg	Glu	Leu	Leu	Arg	Arg	Arg	Tyr	Gln	Ser	Ser	Pro	Ala	340	345	350
Lys	Pro	Asp	Ser	Ser	Phe	Tyr	Lys	Gly	Leu	Asp	Leu	Asn	Gly	Gly	Pro	355	360	365
Asp	Asp	Pro	Leu	Gln	Gln	Thr	Gly	Gln	Leu	Phe	Gly	Gly	Leu	Val	Arg	370	375	380
Asp	Ile	Arg	Arg	Arg	Tyr	Pro	Tyr	Tyr	Leu	Ser	Asp	Ile	Thr	Asp	Ala	385	390	395
Phe	Ser	Pro	Gln	Val	Leu	Ala	Ala	Val	Ile	Phe	Ile	Tyr	Phe	Ala	Ala	405	410	415
Leu	Ser	Pro	Ala	Ile	Thr	Phe	Gly	Gly	Leu	Leu	Gly	Glu	Lys	Thr	Arg	420	425	430
Asn	Gln	Met	Gly	Val	Ser	Glu	Leu	Leu	Ile	Ser	Thr	Ala	Val	Gln	Gly	435	440	445
Ile	Leu	Phe	Ala	Leu	Leu	Gly	Ala	Gln	Pro	Leu	Leu	Val	Val	Gly	Phe	450	455	460
Ser	Gly	Pro	Leu	Leu	Val	Phe	Glu	Glu	Ala	Phe	Phe	Ser	Phe	Cys	Glu	465	470	475
Thr	Asn	Gly	Leu	Glu	Tyr	Ile	Val	Gly	Arg	Val	Trp	Ile	Gly	Phe	Trp	485	490	495
Leu	Ile	Leu	Leu	Val	Val	Leu	Val	Val	Ala	Phe	Glu	Gly	Ser	Phe	Leu	500	505	510
Val	Arg	Phe	Ile	Ser	Arg	Tyr	Thr	Gln	Glu	Ile	Phe	Ser	Phe	Leu	Ile	515	520	525

Ser Leu Ile Phe Ile Tyr Glu Thr Phe Ser Lys Leu Ile Lys Ile Phe
530 535 540

Gln Asp His Pro Leu Gln Lys Thr Tyr Asn Tyr Asn Val Leu Met Val
545 550 555 560

Pro Lys Pro Gln Gly Pro Leu Pro Asn Thr Ala Leu Leu Ser Leu Val
565 570 575

Leu Met Ala Gly Thr Phe Phe Phe Ala Met Met Leu Arg Lys Phe Lys
580 585 590

Asn Ser Ser Tyr Phe Pro Gly Lys Leu Arg Arg Val Ile Gly Asp Phe
595 600 605

Gly Val Pro Ile Ser Ile Leu Ile Met Val Leu Val Asp Phe Phe Ile
610 615 620

Gln Asp Thr Tyr Thr Gln Lys Leu Ser Val Pro Asp Gly Phe Lys Val
625 630 635 640

Ser Asn Ser Ser Ala Arg Gly Trp Val Ile His Pro Leu Gly Leu Arg
645 650 655

Ser Glu Phe Pro Ile Trp Met Met Phe Ala Ser Ala Leu Pro Ala Leu
660 665 670

Leu Val Phe Ile Leu Ile Phe Leu Glu Ser Gln Ile Thr Thr Leu Ile
675 680 685

Val Ser Lys Pro Glu Arg Lys Met Val Lys Gly Ser Gly Phe His Leu
690 695 700

Asp Leu Leu Leu Val Val Gly Met Gly Gly Val Ala Ala Leu Phe Gly
705 710 715 720

Met Pro Trp Leu Ser Ala Thr Thr Val Arg Ser Val Thr His Ala Asn
725 730 735

Ala Leu Thr Val Met Gly Lys Ala Ser Thr Pro Gly Ala Ala Ala Gln
740 745 750

Ile Gln Glu Val Lys Glu Gln Arg Ile Ser Gly Leu Leu Val Ala Val
755 760 765

Leu Val Gly Leu Ser Ile Leu Met Glu Pro Ile Leu Ser Arg Ile Pro
770 775 780

Leu Ala Val Leu Phe Gly Ile Phe Leu Tyr Met Gly Val Thr Ser Leu
785 790 795 800

Ser Gly Ile Gln Leu Phe Asp Arg Ile Leu Leu Leu Phe Lys Pro Pro
805 810 815

Lys Tyr His Pro Asp Val Pro Tyr Val Lys Arg Val Lys Thr Trp Arg
820 825 830

Met His Leu Phe Thr Gly Ile Gln Ile Ile Cys Leu Ala Val Leu Trp
835 840 845

Val Val Lys Ser Thr Pro Ala Ser Leu Ala Leu Pro Phe Val Leu Ile
850 855 860
Leu Thr Val Pro Leu Arg Arg Val Leu Leu Pro Leu Ile Phe Arg Asn
865 870 875 880
Val Glu Leu Gln Cys Leu Asp Ala Asp Asp Ala Lys Ala Thr Phe Asp
885 890 895
Glu Glu Glu Gly Arg Asp Glu Tyr Asp Glu Val Ala Met Pro Val
900 905 910

<210> 7
<211> 3637
<212> DNA
<213> Homo sapiens

<400> 7
cagcggctgc aggacttcac caagggaccc tgaggctcgt gagcagggac ccgcggtgcg 60
ggttatgctg ggggctcaga tcaccgtaga caactggaca ctcaggacca cgccatggag 120
gagctgcagg atgattatga agacatgatg gaggagaatc tggagcagga ggaatatgaa 180
gaccagaca tccccgagtc ccagatggag gagccggcag ctcacgacac cgaggcaaca 240
gccacagact accacaccac atcacacccg ggtaccaca aggtctatgt ggagctgcag 300
gagctggtga tggacgaaaa gaaccaggag ctgagatgga tggaggcggc gcgctgggtg 360
caactggagg agaacctggg ggagaatggg gcctggggcc gcccgcacct ctctcacctc 420
accttctgga gcctcctaga gctgcgtaga gtcttcacca aggggtactgt tctcctagac 480
ctgcaagaga cctccctggc tggagtggcc aaccaactgc tagacagggt tatctttgaa 540
gaccagatcc ggcctcagga ccgagaggag ctgctccggg ccctgctgct taaacacagc 600
cacgctggag agctggaggc cctggggggg gtgaagcctg cagtccctgac acgctctggg 660
gatccttcac agcctctgct cccccaacac tctcactgg agacacagct cttctgtgag 720
caggagatg ggggcacaga agggcactca ccatctggaa ttctggaaaa gattcccccg 780
gattcagagg ccacgttggg gctagtgggc cgcgccgact tcttgagca gccggtgctg 840
ggcttcgtga ggctgcagga ggcagcggag ctggaggcgg tggagctgcc ggtgcctata 900
cgcttcctct ttgtgttgct gggacctgag gccccccaca tcgattacac ccagcttggc 960
cgggctgctg ccaccctcat gtcagagagg gtgttccgca tagatgccta catggctcag 1020
agccgagggg agctgctgca ctccctagag ggcttcctgg actgcagcct agtgctgcct 1080
cccaccgatg cccctccga gcaggcactg ctcagtctgg tgccctgtgca gagggagcta 1140
cttcgaaggc gctatcagtc cagccctgcc aagccagact ccagcttcta caagggccta 1200
gacttaaatg ggggccaga tgaccctctg cagcagacag gccagctctt cgggggcctg 1260

3637 bp DNA

gtgcgtgata	tccggcgccg	ctacccttat	tacctgagtg	acatcacaga	tgcatcagc	1320
ccccaggtcc	tggtcgccgt	catcttcac	tactttgctg	cactgtcacc	cgccatcacc	1380
ttcggcgccg	tccctgggaga	aaagacccgg	aaccagatgg	gagtgtcgga	gctgctgatc	1440
tccactgcag	tgcaaggcat	tctcttcgcc	ctgctggggg	ctcagcccct	gcttgtggtc	1500
ggctttctcag	gacccctgct	gggtgtttgag	gaagccttct	tctcgttctg	cgagaccaac	1560
ggcttagagt	acatcgtggg	ccgcgtgtgg	atcggcttct	ggctcatcct	gctgggtggg	1620
ttgggtgggtg	ccttcogagg	tagcttctctg	gtccgcttca	tctcccgtta	taccagagg	1680
atctttctcct	tcctcatttc	cctcatcttc	atctatgaga	ctttctccaa	gctgatcaag	1740
atcttccagg	accacccact	acagaagact	tataactaca	acgtgttgat	ggtgcccaaa	1800
cctcagggcc	ccctgcccaa	cacagccctc	ctctcccttg	tgctcatggc	cggtaccttc	1860
ttcttttgcca	tgatgctgcg	caagttcaag	aacagctcct	atttccctgg	caagctgcgt	1920
cgggtcatcg	gggacttcgg	gggtcccatc	tccatcctga	tcattggctc	gggtggatttc	1980
ttcattcagg	atacctacac	ccagaaactc	tcgggtgctg	atggcttcaa	gggtgtccaac	2040
tcctcagccc	ggggctgggt	catccacca	ctgggcttgc	gttcagagtt	tcccatctgg	2100
atgatgtttg	cctccgccct	gcctgctctg	ctgggtcttca	tcctcatatt	cctggagtct	2160
cagatcacca	cgctgattgt	cagcaaacct	gagcgcaaga	tggtcaagg	ctccggcttc	2220
cacctggacc	tgctgctggg	agtaggcatg	gggtgggtgg	ccgccctctt	tgggatgccc	2280
tggtcagtg	ccaccaccgt	gcgttccgtc	acccatgcca	acgccctcac	tgtcatgggc	2340
aaagccagca	ccccaggggc	tgcaagccag	atccaggagg	tcaaagagca	gcggatcagt	2400
ggactcctgg	tcgctgtgct	tgtgggcctg	tccatcctca	tggagcccat	cctgtcccgc	2460
atccccctgg	ctgtactgtt	tggcatcttc	ctctacatgg	gggtcacgtc	gctcagcggc	2520
atccagctct	ttgaccgcat	cttgcttctg	ttcaagccac	ccaagtatca	cccagatgtg	2580
ccctacgtca	agcgggtgaa	gacctggcgc	atgcacttat	tcacgggcat	ccagatcatc	2640
tgcttgccag	tgctgtgggt	gggtgaagtcc	acgccggcct	ccctggccct	gcccttcgtc	2700
ctcatcctca	ctgtgccgct	gcggcgcgtc	ctgctgccgc	tcattctcag	gaacgtggag	2760
cttcagtgtc	tggatgctga	tgatgccaag	gcaacctttg	atgaggagga	aggtcgggat	2820
gaatacgacg	aagtggccat	gcctgtgtga	ggggcgggcc	caggccctag	accctcccc	2880
accattccac	atccccacct	tccaaggaaa	agcagaagtt	catgggcacc	tcattggactc	2940
aggatcctcc	tggagcagca	gctgaggccc	cagggctgtg	gggtggggaag	gaaggcgtgt	3000
ccaggagacc	ttccacaaa	ggtagcctgg	cttttctggc	tggggatggc	cgatggggcc	3060

cacattaggg ggtttgttgc acagtccctc ctgttgccac actttcactg gggatcccgt 3120
gctggaagac ttagatctga gccctccctc ttcccagcac aggcaggggt agaagcaaag 3180
gcaggaggtg ggtgagcggg tggggtgctt gctgtgtgac cttgggtaag tcccttgacc 3240
tttccaggcc tatatttcct cttctgtaaa atgggtatat tgatgataat acccacatta 3300
caggatgggt actgaggacc aaagatacat gtaaaatagg gctttgtaaa ctccacaggg 3360
actgttctat agcagtcac atttgtcttt gaacgtaccc aagggtcacat agctgggatt 3420
tgaactgagc cgtgcagctg ggatttgaac caggccttct gatttcaagg tccgagctct 3480
gtcctctgtc agtcatgcgt ccactttccc tcccctgtg actcctccct tccccactct 3540
gctcccagcc cctaccttga gaccctcttc tctgggccca gagagaggcg tcctgggtga 3600
aggaaggtac aggcaggatg atccagggat tgggctg 3637

<210> 8
<211> 911
<212> PRT
<213> Homo sapiens

<400> 8

Met Glu Glu Leu Gln Asp Asp Tyr Glu Asp Met Met Glu Glu Asn Leu
1 5 10 15
Glu Gln Glu Glu Tyr Glu Asp Pro Asp Ile Pro Glu Ser Gln Met Glu
20 25 30
Glu Pro Ala Ala His Asp Thr Glu Ala Thr Ala Thr Asp Tyr His Thr
35 40 45
Thr Ser His Pro Gly Thr His Lys Val Tyr Val Glu Leu Gln Glu Leu
50 55 60
Val Met Asp Glu Lys Asn Gln Glu Leu Arg Trp Met Glu Ala Ala Arg
65 70 75 80
Trp Val Gln Leu Glu Glu Asn Leu Gly Glu Asn Gly Ala Trp Gly Arg
85 90 95
Pro His Leu Ser His Leu Thr Phe Trp Ser Leu Leu Glu Leu Arg Arg
100 105 110
Val Phe Thr Lys Gly Thr Val Leu Leu Asp Leu Gln Glu Thr Ser Leu
115 120 125
Ala Gly Val Ala Asn Gln Leu Leu Asp Arg Phe Ile Phe Glu Asp Gln
130 135 140
Ile Arg Pro Gln Asp Arg Glu Glu Leu Leu Arg Ala Leu Leu Leu Lys
145 150 155 160
His Ser His Ala Gly Glu Leu Glu Ala Leu Gly Gly Val Lys Pro Ala
165 170 175

Val Leu Thr Arg Ser Gly Asp Pro Ser Gln Pro Leu Leu Pro Gln His
180 185 190

Ser Ser Leu Glu Thr Gln Leu Phe Cys Glu Gln Gly Asp Gly Gly Thr
195 200 205

Glu Gly His Ser Pro Ser Gly Ile Leu Glu Lys Ile Pro Pro Asp Ser
210 215 220

Glu Ala Thr Leu Val Leu Val Gly Arg Ala Asp Phe Leu Glu Gln Pro
225 230 235 240

Val Leu Gly Phe Val Arg Leu Gln Glu Ala Ala Glu Leu Glu Ala Val
245 250 255

Glu Leu Pro Val Pro Ile Arg Phe Leu Phe Val Leu Leu Gly Pro Glu
260 265 270

Ala Pro His Ile Asp Tyr Thr Gln Leu Gly Arg Ala Ala Ala Thr Leu
275 280 285

Met Ser Glu Arg Val Phe Arg Ile Asp Ala Tyr Met Ala Gln Ser Arg
290 295 300

Gly Glu Leu Leu His Ser Leu Glu Gly Phe Leu Asp Cys Ser Leu Val
305 310 315 320

Leu Pro Pro Thr Asp Ala Pro Ser Glu Gln Ala Leu Leu Ser Leu Val
325 330 335

Pro Val Gln Arg Glu Leu Leu Arg Arg Arg Tyr Gln Ser Ser Pro Ala
340 345 350

Lys Pro Asp Ser Ser Phe Tyr Lys Gly Leu Asp Leu Asn Gly Gly Pro
355 360 365

Asp Asp Pro Leu Gln Gln Thr Gly Gln Leu Phe Gly Gly Leu Val Arg
370 375 380

Asp Ile Arg Arg Arg Tyr Pro Tyr Tyr Leu Ser Asp Ile Thr Asp Ala
385 390 395 400

Phe Ser Pro Gln Val Leu Ala Ala Val Ile Phe Ile Tyr Phe Ala Ala
405 410 415

Leu Ser Pro Ala Ile Thr Phe Gly Gly Leu Leu Gly Glu Lys Thr Arg
420 425 430

Asn Gln Met Gly Val Ser Glu Leu Leu Ile Ser Thr Ala Val Gln Gly
435 440 445

Ile Leu Phe Ala Leu Leu Gly Ala Gln Pro Leu Leu Val Val Gly Phe
450 455 460

Ser Gly Pro Leu Leu Val Phe Glu Glu Ala Phe Phe Ser Phe Cys Glu
465 470 475 480

Thr Asn Gly Leu Glu Tyr Ile Val Gly Arg Val Trp Ile Gly Phe Trp
485 490 495

Leu Ile Leu Leu Val Val Leu Val Val Ala Phe Glu Gly Ser Phe Leu
500 505 510

Val Arg Phe Ile Ser Arg Tyr Thr Gln Glu Ile Phe Ser Phe Leu Ile
515 520 525

Ser Leu Ile Phe Ile Tyr Glu Thr Phe Ser Lys Leu Ile Lys Ile Phe
530 535 540

Gln Asp His Pro Leu Gln Lys Thr Tyr Asn Tyr Asn Val Leu Met Val
545 550 555 560

Pro Lys Pro Gln Gly Pro Leu Pro Asn Thr Ala Leu Leu Ser Leu Val
565 570 575

Leu Met Ala Gly Thr Phe Phe Phe Ala Met Met Leu Arg Lys Phe Lys
580 585 590

Asn Ser Ser Tyr Phe Pro Gly Lys Leu Arg Arg Val Ile Gly Asp Phe
595 600 605

Gly Val Pro Ile Ser Ile Leu Ile Met Val Leu Val Asp Phe Phe Ile
610 615 620

Gln Asp Thr Tyr Thr Gln Lys Leu Ser Val Pro Asp Gly Phe Lys Val
625 630 635 640

Ser Asn Ser Ser Ala Arg Gly Trp Val Ile His Pro Leu Gly Leu Arg
645 650 655

Ser Glu Phe Pro Ile Trp Met Met Phe Ala Ser Ala Leu Pro Ala Leu
660 665 670

Leu Val Phe Ile Leu Ile Phe Leu Glu Ser Gln Ile Thr Thr Leu Ile
675 680 685

Val Ser Lys Pro Glu Arg Lys Met Val Lys Gly Ser Gly Phe His Leu
690 695 700

Asp Leu Leu Leu Val Val Gly Met Gly Gly Val Ala Ala Leu Phe Gly
705 710 715 720

Met Pro Trp Leu Ser Ala Thr Thr Val Arg Ser Val Thr His Ala Asn
725 730 735

Ala Leu Thr Val Met Gly Lys Ala Ser Thr Pro Gly Ala Ala Ala Gln
740 745 750

Ile Gln Glu Val Lys Glu Gln Arg Ile Ser Gly Leu Leu Val Ala Val
755 760 765

Leu Val Gly Leu Ser Ile Leu Met Glu Pro Ile Leu Ser Arg Ile Pro
770 775 780

Leu Ala Val Leu Phe Gly Ile Phe Leu Tyr Met Gly Val Thr Ser Leu
785 790 795 800

Ser Gly Ile Gln Leu Phe Asp Arg Ile Leu Leu Leu Phe Lys Pro Pro
805 810 815

Lys Tyr His Pro Asp Val Pro Tyr Val Lys Arg Val Lys Thr Trp Arg
820 825 830

Met His Leu Phe Thr Gly Ile Gln Ile Ile Cys Leu Ala Val Leu Trp
835 840 845

Val Val Lys Ser Thr Pro Ala Ser Leu Ala Leu Pro Phe Val Leu Ile
850 855 860

Leu Thr Val Pro Leu Arg Arg Val Leu Leu Pro Leu Ile Phe Arg Asn
865 870 875 880

Val Glu Leu Gln Cys Leu Asp Ala Asp Asp Ala Lys Ala Thr Phe Asp
885 890 895

Glu Glu Glu Gly Arg Asp Glu Tyr Asp Glu Val Ala Met Pro Val
900 905 910

<210> 9
<211> 5917
<212> DNA
<213> Plasmodium falciparum

<400> 9
attaatttaa ttaagttgtg taataatata ttccattacc aagaaaaaaaa aaaaaaagaa 60
ttttttttga aatataaaat tttttttttt tttttttttt ttttataaga atttaatatata 120
tatatatata tatatatata tataattttt tttcacaaaa aacaaaaaaaa aaacaaaaag 180
ggttgatat atactataa tatatatata tatacatatg tgtaaggaaa ataatttgaa 240
taatattaaa attatagtta tgatgtaata aataattttt attataaaaa taaggctaata 300
gtaaaatgca aaaataaatg tatacatatt ttgctaagt catattttta aattattaac 360
ttattttatt attattattt ttatttatat atattattta ttagcttta ttcaataatg 420
aagatcatat tctttttatg ttcatttctt ttttttatta taaatacaca atgtgtaaca 480
catgaaagtt atcaagaact tgtcaaaaaa ctagaagctt tagaagatgc agtattgaca 540
ggttatagtt tatttcaaaa ggaaaaaatg gtattaaatg aaggaacaag tggaacagct 600
gttacaacta gtacacctgg ttcaaagggt tcagttgctt caggtggttc aggtggctca 660
gttgcttcag gtggctcagt tgcttcaggt ggctcagttg cttcaggtgg ctgagttgct 720
tcaggtgggt caggtaatc aagacgtaca aatccttcag ataattcaag tgattcagat 780
gctaaatctt acgctgattt aaaacacaga gtacgaaatt acttgtaaac tatcaaagaa 840
ctcaaatact ctcaactctt tgatttaact aatcatatgt taactttgtg tgataatatt 900
catgggttca aatatttaatt tgatggatat gaagaaatta atgaattatt atataaatta 960
aacttttatt ttgatttatt aagagcaaaa ttaaattgatg tatgtgctaa tgattattgt 1020
caaatacctt tcaatcttaa aattcgtgca aatgaattag acgtacttaa aaaacttggtg 1080

ttcggatata gaaaaccatt agacaatatt aaagataatg taggaaaaat ggaagattac 1140
attaaaaaaa ataaaaaac catagaaaat ataatgaat taattgaaga aagtaagaaa 1200
acaattgata aaaataagaa tgcaactaaa gaagaagaaa aaaaaaatt ataccaagct 1260
caatatgata tttctattta caataaacia ttagaagaag cacataatth aataagcgtt 1320
ttagaaaaac gtattgacac tttaaaaaaa aatgaaaaca ttaaggaatt acttgataag 1380
ataaatgaaa ttaaaaatcc cccaccggcc aattctggaa atacaccaa tactctcctt 1440
gataagaaca aaaaaatcga ggaacacgaa aaagaaataa aagaaattgc caaaactatt 1500
aaatttaata ttgatagttt atttactgat ccacttgaat tagaatacta tttagagaaa 1560
aaaaataaaa atattgatat aagtgcgaa gttgaaacia aggaatcaac tgaacccaat 1620
gaatatccaa atggagttac ttatcctttg tcatataacg atattaacia tgctttaaat 1680
gaacttaatt cttttggtga tttaatat atctttgatt atacaaaaga accaagtaaa 1740
aacatatata ctgataatga aagaaaaaaa ttcataaatg aaattaagga aaaaattaaa 1800
atagaaaaaa aaaaaattga atctgataaa aaatcttacg aagacagatc taagtcttta 1860
aatgatataa caaaagaata tgaaaaatta cttaatgaaa tttatgatag caaattcaat 1920
aataatatag atttaactaa tttcgaaaaa atgatgggta aaagatatc atataaagtt 1980
gagaaactta cacaccataa tacttttgca tcctatgaaa attctaaaca taatcttgaa 2040
aagttaacia aagctcttaa atatatggaa gattattctt taaggaatat agtagttgaa 2100
aaagaattaa aatattataa aaatttaata agcaaatag aaatgagat tgaacatta 2160
gttgaaaata ttaaaaaaga tgaagaacag ctttttgaaa aaaaaattac taaagacgaa 2220
aataaaccag atgaaaaaat tttagaagta tctgacattg taaaagtaca agttcaaaaa 2280
gttttattaa tgaacaaaat tgacgaatta aaaaagactc aattgatttt aaaaaatgta 2340
gaattaaaac ataatatata tgttcccaat tcttacaac aagaaaataa gcaagaacct 2400
tattatttaa ttgtgttgaa aaaagaaatt gataaattaa aagtgttcat gcctaaggta 2460
gaatcattga taaatgaaga aaaaaaaaaac ataaaaacag aaggtcaatc ggataattcg 2520
gaaccatcaa ccgaaggaga aataacagga caagcaacta caaacctgg acaacaagca 2580
ggatctgctt tagaaggaga ttcagtacia gcacaagcac aagaacaaaa acaagcacia 2640
ccaccagtac cagtaccagt accagaagca aaagcacaag tccaacacc accagcacca 2700
gtaataata aaactgaaaa tgtttccaaa ttagattatc ttgaaaaatt atatgaatth 2760
ttaaatactt catatatatg tcacaaatat attttggtth cactcaac tatgaacgaa 2820
aagatattaa aacaatataa aattacaaag gaggaagaaa gcaaatatag ttcatgtgat 2880

ccattagact tattgttttaa tatacaaaat aacatacctg taatgtattc tatgtttgat 2940
agcttaaaca atagttttatc acaactatct atggaaatct atgaaaaaga aatgggtttgt 3000
aatattatata aacttaagga taatgacaaa attaaaaatt tattagagga agcgaaaaaa 3060
gtatccacat ctgtaaaaac tctttcaagt tcatcaatgc aaccattatc attaacacct 3120
caggataaac ccgaagtaag tgcaaatgat gatacatcac attctacaaa tttgaataat 3180
agtttaaaat tatttgaaaa catattgagt cttggaaaaa acaaaaatat ataccaagaa 3240
ttaatagggtc aaaaaagtag tgaaaacttt tatgaaaaga tattaaaaga tagtgatata 3300
ttttataatg aatctttttac aaattttgta aaatctaaag ctgatgatat taattcattg 3360
aatgatgaat caaaaaggaa gaaattagaa gaagatatta ataaattaaa aaaaacttta 3420
cagttatcat ttgattttata taataaatat aaattaaaat tagaaagatt atttgataaa 3480
aagaaaacag ttggtaaata taaaatgcaa attaaaaaac ttactttatt aaaagaacaa 3540
ttagaatcaa aattgaattc acttaataac ccaaagcatg tattacaaaa cttttctggt 3600
ttctttaaca aaaaaaaaga agctgaaata gcagaaactg aaaacacatt agaaaacaca 3660
aaaatattat tgaaacatta taaaggactt gttaaataat ataattggtga atcatctcca 3720
ttaaaaactt taagtgaaga atcaattcaa acagaagata attatgccag tttagaaaac 3780
tttaaagtat taagtaaatt agaaggaaaa ttaaaggata atttaaattt agaaaagaaa 3840
aaattatcat acttatcaag tggattacat catttaattg ctgaattaaa agaagtaata 3900
aaaaataaaa attatacagg taattctcca agtgaaaata atacggatgt taacaatgca 3960
ttagaatctt acaaaaaatt tctcccagaa ggaacagatg ttgcaacagt tgtaagtga 4020
agtggtatccg acacattaga acaaagtcaa ccaaagaaac cagcatcaac tcatgtagga 4080
gcagagtcta acacaataac aacatcacia aatgtcgatg atgaagtaga tgacgtaatc 4140
atagtacctt tattttggaga atccgaagaa gattatgatg atttaggaca agtagtaaca 4200
ggagaagcag taactccttc cgtaattgat aacatacttt ctaaaattga aaatgaatat 4260
gaggttttat attttaaacc tttagcaggt gtttatagaa gtttaaaaaa acaattagaa 4320
aataacgtta tgacatttaa tgttaatggt aaggatattt taaattcacg atttaataaa 4380
cgtgaaaatt tcaaaaatgt tttagaatca gatttaattc catataaaga tttaacatca 4440
agtaattatg ttgtcaaaga tccatataaa tttcttaata aagaaaaaag agataaattc 4500
ttaagcagtt ataattatat taaggattca atagatacgg atataaattt tgcaaatgat 4560
gttcttggat attataaaat attatccgaa aaatataaat cagattttaga ttcaattaaa 4620
aaatatatca acgacaaaca aggtgaaaat gagaaatacc ttcccttttt aaacaatat 4680

gagaccttat ataaaacagt taatgataaa attgatttat ttgtaattca tttagaagca 4740
aaagttctaa attatacata tgagaaatca aacgtagaag ttaaaataaa agaacttaat 4800
tacttaaaaa caattcaaga caaattggca gattttaaaa aaaataacaa tttcgttgga 4860
attgctgatt tatcaacaga ttataacat aataacttat tgacaaagtt ccttagtaca 4920
ggtatggttt ttgaaaatct tgctaaaacc gttttatcta atttacttga tggaaacttg 4980
caaggtatgt taaacatttc acaacaccaa tgcgtaaaaa aacaatgtcc acaaaattct 5040
ggatgtttca gacatttaga tgaaagagaa gaatgtaaat gtttattaaa ttacaaacaa 5100
gaaggtgata aatgtgttga aaatccaat cctacttgta acgaaaataa tgggtggatgt 5160
gatgcagatg ccaaatgtac cgaagaagat tcaggtagca acggaaagaa aatcacatgt 5220
gaatgtacta aacctgattc ttatccactt ttcgatggta ttttctgcag ttcttctaac 5280
ttcttaggaa tatcattctt attaatctc atgttaatat tatacagttt catttaaaaa 5340
atgtaggagt taaaatatgt taccttaatt tttttttttt tttttttttt taaatatata 5400
tatatattaa tatatatata taaaatatta cataatatat atatatatat ttagttatta 5460
caggaatagt gatatttttag tcatgttcaa aatatattaa aaaattataa atattataat 5520
aaaaaaaaa aaaaaaaaaa attatatact tataaattta tacatttata catatatata 5580
tatatatattt tttttcttct ttcttttcaa gttctatttt atattttata tatagattta 5640
ataaaaaact ttttaaaata aaaaaagta cgtaaatttt aatatatata tatatatata 5700
taatatatat ataatatata tttatttatt tatatgtata atatatttac atatattatt 5760
ataatatata tatttttttt tacgcataca taaaagcat tttttttttt tataaacatt 5820
ccaacaatta taaaataact ttaataataa cattaaattt ttattttttt ttttaaaaaa 5880
aaaaaaaaa aaaaaaaaaa actaaagaga ttattca 5917

<210> 10
<211> 1639
<212> PRT
<213> Plasmodium falciparum

<400> 10

Met Lys Ile Ile Phe Phe Leu Cys Ser Phe Leu Phe Phe Ile Ile Asn
1 5 10 15

Thr Gln Cys Val Thr His Glu Ser Tyr Gln Glu Leu Val Lys Lys Leu
20 25 30

Glu Ala Leu Glu Asp Ala Val Leu Thr Gly Tyr Ser Leu Phe Gln Lys
35 40 45

Glu	Lys	Met	Val	Leu	Asn	Glu	Gly	Thr	Ser	Gly	Thr	Ala	Val	Thr	Thr	50	55	60
Ser	Thr	Pro	Gly	Ser	Lys	Gly	Ser	Val	Ala	Ser	Gly	Gly	Ser	Gly	Gly	65	70	75
Ser	Val	Ala	Ser	Gly	Gly	Ser	Val	Ala	Ser	Gly	Gly	Ser	Val	Ala	Ser	85	90	95
Gly	Gly	Ser	Val	Ala	Ser	Gly	Gly	Ser	Gly	Asn	Ser	Arg	Arg	Thr	Asn	100	105	110
Pro	Ser	Asp	Asn	Ser	Ser	Asp	Ser	Asp	Ala	Lys	Ser	Tyr	Ala	Asp	Leu	115	120	125
Lys	His	Arg	Val	Arg	Asn	Tyr	Leu	Leu	Thr	Ile	Lys	Glu	Leu	Lys	Tyr	130	135	140
Pro	Gln	Leu	Phe	Asp	Leu	Thr	Asn	His	Met	Leu	Thr	Leu	Cys	Asp	Asn	145	150	155
Ile	His	Gly	Phe	Lys	Tyr	Leu	Ile	Asp	Gly	Tyr	Glu	Glu	Ile	Asn	Glu	165	170	175
Leu	Leu	Tyr	Lys	Leu	Asn	Phe	Tyr	Phe	Asp	Leu	Leu	Arg	Ala	Lys	Leu	180	185	190
Asn	Asp	Val	Cys	Ala	Asn	Asp	Tyr	Cys	Gln	Ile	Pro	Phe	Asn	Leu	Lys	195	200	205
Ile	Arg	Ala	Asn	Glu	Leu	Asp	Val	Leu	Lys	Lys	Leu	Val	Phe	Gly	Tyr	210	215	220
Arg	Lys	Pro	Leu	Asp	Asn	Ile	Lys	Asp	Asn	Val	Gly	Lys	Met	Glu	Asp	225	230	235
Tyr	Ile	Lys	Lys	Asn	Lys	Lys	Thr	Ile	Glu	Asn	Ile	Asn	Glu	Leu	Ile	245	250	255
Glu	Glu	Ser	Lys	Lys	Thr	Ile	Asp	Lys	Asn	Lys	Asn	Ala	Thr	Lys	Glu	260	265	270
Glu	Glu	Lys	Lys	Lys	Leu	Tyr	Gln	Ala	Gln	Tyr	Asp	Leu	Ser	Ile	Tyr	275	280	285
Asn	Lys	Gln	Leu	Glu	Glu	Ala	His	Asn	Leu	Ile	Ser	Val	Leu	Glu	Lys	290	295	300
Arg	Ile	Asp	Thr	Leu	Lys	Lys	Asn	Glu	Asn	Ile	Lys	Glu	Leu	Leu	Asp	305	310	315
Lys	Ile	Asn	Glu	Ile	Lys	Asn	Pro	Pro	Pro	Ala	Asn	Ser	Gly	Asn	Thr	325	330	335
Pro	Asn	Thr	Leu	Leu	Asp	Lys	Asn	Lys	Lys	Ile	Glu	Glu	His	Glu	Lys	340	345	350
Glu	Ile	Lys	Glu	Ile	Ala	Lys	Thr	Ile	Lys	Phe	Asn	Ile	Asp	Ser	Leu	355	360	365

Phe	Thr	Asp	Pro	Leu	Glu	Leu	Glu	Tyr	Tyr	Leu	Arg	Glu	Lys	Asn	Lys	370	375	380	
Asn	Ile	Asp	Ile	Ser	Ala	Lys	Val	Glu	Thr	Lys	Glu	Ser	Thr	Glu	Pro	385	390	395	400
Asn	Glu	Tyr	Pro	Asn	Gly	Val	Thr	Tyr	Pro	Leu	Ser	Tyr	Asn	Asp	Ile	405	410	415	
Asn	Asn	Ala	Leu	Asn	Glu	Leu	Asn	Ser	Phe	Gly	Asp	Leu	Ile	Asn	Pro	420	425	430	
Phe	Asp	Tyr	Thr	Lys	Glu	Pro	Ser	Lys	Asn	Ile	Tyr	Thr	Asp	Asn	Glu	435	440	445	
Arg	Lys	Lys	Phe	Ile	Asn	Glu	Ile	Lys	Glu	Lys	Ile	Lys	Ile	Glu	Lys	450	455	460	
Lys	Lys	Ile	Glu	Ser	Asp	Lys	Lys	Ser	Tyr	Glu	Asp	Arg	Ser	Lys	Ser	465	470	475	480
Leu	Asn	Asp	Ile	Thr	Lys	Glu	Tyr	Glu	Lys	Leu	Leu	Asn	Glu	Ile	Tyr	485	490	495	
Asp	Ser	Lys	Phe	Asn	Asn	Asn	Ile	Asp	Leu	Thr	Asn	Phe	Glu	Lys	Met	500	505	510	
Met	Gly	Lys	Arg	Tyr	Ser	Tyr	Lys	Val	Glu	Lys	Leu	Thr	His	His	Asn	515	520	525	
Thr	Phe	Ala	Ser	Tyr	Glu	Asn	Ser	Lys	His	Asn	Leu	Glu	Lys	Leu	Thr	530	535	540	
Lys	Ala	Leu	Lys	Tyr	Met	Glu	Asp	Tyr	Ser	Leu	Arg	Asn	Ile	Val	Val	545	550	555	560
Glu	Lys	Glu	Leu	Lys	Tyr	Tyr	Lys	Asn	Leu	Ile	Ser	Lys	Ile	Glu	Asn	565	570	575	
Glu	Ile	Glu	Thr	Leu	Val	Glu	Asn	Ile	Lys	Lys	Asp	Glu	Glu	Gln	Leu	580	585	590	
Phe	Glu	Lys	Lys	Ile	Thr	Lys	Asp	Glu	Asn	Lys	Pro	Asp	Glu	Lys	Ile	595	600	605	
Leu	Glu	Val	Ser	Asp	Ile	Val	Lys	Val	Gln	Val	Gln	Lys	Val	Leu	Leu.	610	615	620	
Met	Asn	Lys	Ile	Asp	Glu	Leu	Lys	Lys	Thr	Gln	Leu	Ile	Leu	Lys	Asn	625	630	635	640
Val	Glu	Leu	Lys	His	Asn	Ile	His	Val	Pro	Asn	Ser	Tyr	Lys	Gln	Glu	645	650	655	
Asn	Lys	Gln	Glu	Pro	Tyr	Tyr	Leu	Ile	Val	Leu	Lys	Lys	Glu	Ile	Asp	660	665	670	
Lys	Leu	Lys	Val	Phe	Met	Pro	Lys	Val	Glu	Ser	Leu	Ile	Asn	Glu	Glu	675	680	685	

Lys Lys Asn Ile Lys Thr Glu Gly Gln Ser Asp Asn Ser Glu Pro Ser
 690 695 700
 Thr Glu Gly Glu Ile Thr Gly Gln Ala Thr Thr Lys Pro Gly Gln Gln
 705 710 715 720
 Ala Gly Ser Ala Leu Glu Gly Asp Ser Val Gln Ala Gln Ala Gln Glu
 725 730 735
 Gln Lys Gln Ala Gln Pro Pro Val Pro Val Pro Val Pro Glu Ala Lys
 740 745 750
 Ala Gln Val Pro Thr Pro Pro Ala Pro Val Asn Asn Lys Thr Glu Asn
 755 760 765
 Val Ser Lys Leu Asp Tyr Leu Glu Lys Leu Tyr Glu Phe Leu Asn Thr
 770 775 780
 Ser Tyr Ile Cys His Lys Tyr Ile Leu Val Ser His Ser Thr Met Asn
 785 790 795 800
 Glu Lys Ile Leu Lys Gln Tyr Lys Ile Thr Lys Glu Glu Glu Ser Lys
 805 810 815
 Leu Ser Ser Cys Asp Pro Leu Asp Leu Leu Phe Asn Ile Gln Asn Asn
 820 825 830
 Ile Pro Val Met Tyr Ser Met Phe Asp Ser Leu Asn Asn Ser Leu Ser
 835 840 845
 Gln Leu Phe Met Glu Ile Tyr Glu Lys Glu Met Val Cys Asn Leu Tyr
 850 855 860
 Lys Leu Lys Asp Asn Asp Lys Ile Lys Asn Leu Leu Glu Glu Ala Lys
 865 870 875 880
 Lys Val Ser Thr Ser Val Lys Thr Leu Ser Ser Ser Ser Met Gln Pro
 885 890 895
 Leu Ser Leu Thr Pro Gln Asp Lys Pro Glu Val Ser Ala Asn Asp Asp
 900 905 910
 Thr Ser His Ser Thr Asn Leu Asn Asn Ser Leu Lys Leu Phe Glu Asn
 915 920 925
 Ile Leu Ser Leu Gly Lys Asn Lys Asn Ile Tyr Gln Glu Leu Ile Gly
 930 935 940
 Gln Lys Ser Ser Glu Asn Phe Tyr Glu Lys Ile Leu Lys Asp Ser Asp
 945 950 955 960
 Thr Phe Tyr Asn Glu Ser Phe Thr Asn Phe Val Lys Ser Lys Ala Asp
 965 970 975
 Asp Ile Asn Ser Leu Asn Asp Glu Ser Lys Arg Lys Lys Leu Glu Glu
 980 985 990
 Asp Ile Asn Lys Leu Lys Lys Thr Leu Gln Leu Ser Phe Asp Leu Tyr
 995 1000 1005

1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100
 101
 102
 103
 104
 105
 106
 107
 108
 109
 110
 111
 112
 113
 114
 115
 116
 117
 118
 119
 120
 121
 122
 123
 124
 125
 126
 127
 128
 129
 130
 131
 132
 133
 134
 135
 136
 137
 138
 139
 140
 141
 142
 143
 144
 145
 146
 147
 148
 149
 150
 151
 152
 153
 154
 155
 156
 157
 158
 159
 160
 161
 162
 163
 164
 165
 166
 167
 168
 169
 170
 171
 172
 173
 174
 175
 176
 177
 178
 179
 180
 181
 182
 183
 184
 185
 186
 187
 188
 189
 190
 191
 192
 193
 194
 195
 196
 197
 198
 199
 200
 201
 202
 203
 204
 205
 206
 207
 208
 209
 210
 211
 212
 213
 214
 215
 216
 217
 218
 219
 220
 221
 222
 223
 224
 225
 226
 227
 228
 229
 230
 231
 232
 233
 234
 235
 236
 237
 238
 239
 240
 241
 242
 243
 244
 245
 246
 247
 248
 249
 250
 251
 252
 253
 254
 255
 256
 257
 258
 259
 260
 261
 262
 263
 264
 265
 266
 267
 268
 269
 270
 271
 272
 273
 274
 275
 276
 277
 278
 279
 280
 281
 282
 283
 284
 285
 286
 287
 288
 289
 290
 291
 292
 293
 294
 295
 296
 297
 298
 299
 300
 301
 302
 303
 304
 305
 306
 307
 308
 309
 310
 311
 312
 313
 314
 315
 316
 317
 318
 319
 320
 321
 322
 323
 324
 325
 326
 327
 328
 329
 330
 331
 332
 333
 334
 335
 336
 337
 338
 339
 340
 341
 342
 343
 344
 345
 346
 347
 348
 349
 350
 351
 352
 353
 354
 355
 356
 357
 358
 359
 360
 361
 362
 363
 364
 365
 366
 367
 368
 369
 370
 371
 372
 373
 374
 375
 376
 377
 378
 379
 380
 381
 382
 383
 384
 385
 386
 387
 388
 389
 390
 391
 392
 393
 394
 395
 396
 397
 398
 399
 400
 401
 402
 403
 404
 405
 406
 407
 408
 409
 410
 411
 412
 413
 414
 415
 416
 417
 418
 419
 420
 421
 422
 423
 424
 425
 426
 427
 428
 429
 430
 431
 432
 433
 434
 435
 436
 437
 438
 439
 440
 441
 442
 443
 444
 445
 446
 447
 448
 449
 450
 451
 452
 453
 454
 455
 456
 457
 458
 459
 460
 461
 462
 463
 464
 465
 466
 467
 468
 469
 470
 471
 472
 473
 474
 475
 476
 477
 478
 479
 480
 481
 482
 483
 484
 485
 486
 487
 488
 489
 490
 491
 492
 493
 494
 495
 496
 497
 498
 499
 500
 501
 502
 503
 504
 505
 506
 507
 508
 509
 510
 511
 512
 513
 514
 515
 516
 517
 518
 519
 520
 521
 522
 523
 524
 525
 526
 527
 528
 529
 530
 531
 532
 533
 534
 535
 536
 537
 538
 539
 540
 541
 542
 543
 544
 545
 546
 547
 548
 549
 550
 551
 552
 553
 554
 555
 556
 557
 558
 559
 560
 561
 562
 563
 564
 565
 566
 567
 568
 569
 570
 571
 572
 573
 574
 575
 576
 577
 578
 579
 580
 581
 582
 583
 584
 585
 586
 587
 588
 589
 590
 591
 592
 593
 594
 595
 596
 597
 598
 599
 600
 601
 602
 603
 604
 605
 606
 607
 608
 609
 610
 611
 612
 613
 614
 615
 616
 617
 618
 619
 620
 621
 622
 623
 624
 625
 626
 627
 628
 629
 630
 631
 632
 633
 634
 635
 636
 637
 638
 639
 640
 641
 642
 643
 644
 645
 646
 647
 648
 649
 650
 651
 652
 653
 654
 655
 656
 657
 658
 659
 660
 661
 662
 663
 664
 665
 666
 667
 668
 669
 670
 671
 672
 673
 674
 675
 676
 677
 678
 679
 680
 681
 682
 683
 684
 685
 686
 687
 688
 689
 690
 691
 692
 693
 694
 695
 696
 697
 698
 699
 700
 701
 702
 703
 704
 705
 706
 707
 708
 709
 710
 711
 712
 713
 714
 715
 716
 717
 718
 719
 720
 721
 722
 723
 724
 725
 726
 727
 728
 729
 730
 731
 732
 733
 734
 735
 736
 737
 738
 739
 740
 741
 742
 743
 744
 745
 746
 747
 748
 749
 750
 751
 752
 753
 754
 755
 756
 757
 758
 759
 760
 761
 762
 763
 764
 765
 766
 767
 768
 769
 770
 771
 772
 773
 774
 775
 776
 777
 778
 779
 780
 781
 782
 783
 784
 785
 786
 787
 788
 789
 790
 791
 792
 793
 794
 795
 796
 797
 798
 799
 800
 801
 802
 803
 804
 805
 806
 807
 808
 809
 810
 811
 812
 813
 814
 815
 816
 817
 818
 819
 820
 821
 822
 823
 824
 825
 826
 827
 828
 829
 830
 831
 832
 833
 834
 835
 836
 837
 838
 839
 840
 841
 842
 843
 844
 845
 846
 847
 848
 849
 850
 851
 852
 853
 854
 855
 856
 857
 858
 859
 860
 861
 862
 863
 864
 865
 866
 867
 868
 869
 870
 871
 872
 873
 874
 875
 876
 877
 878
 879
 880
 881
 882
 883
 884
 885
 886
 887
 888
 889
 890
 891
 892
 893
 894
 895
 896
 897
 898
 899
 900
 901
 902
 903
 904
 905
 906
 907
 908
 909
 910
 911
 912
 913
 914
 915
 916
 917
 918
 919
 920
 921
 922
 923
 924
 925
 926
 927
 928
 929
 930
 931
 932
 933
 934
 935
 936
 937
 938
 939
 940
 941
 942
 943
 944
 945
 946
 947
 948
 949
 950
 951
 952
 953
 954
 955
 956
 957
 958
 959
 960
 961
 962
 963
 964
 965
 966
 967
 968
 969
 970
 971
 972
 973
 974
 975
 976
 977
 978
 979
 980
 981
 982
 983
 984
 985
 986
 987
 988
 989
 990
 991
 992
 993
 994
 995
 996
 997
 998
 999
 1000

Asn Lys Tyr Lys Leu Lys Leu Glu Arg Leu Phe Asp Lys Lys Lys	1010	1015	1020
Thr Val Gly Lys Tyr Lys Met Gln Ile Lys Lys Leu Thr Leu Leu	1025	1030	1035
Lys Glu Gln Leu Glu Ser Lys Leu Asn Ser Leu Asn Asn Pro Lys	1040	1045	1050
His Val Leu Gln Asn Phe Ser Val Phe Phe Asn Lys Lys Lys Glu	1055	1060	1065
Ala Glu Ile Ala Glu Thr Glu Asn Thr Leu Glu Asn Thr Lys Ile	1070	1075	1080
Leu Leu Lys His Tyr Lys Gly Leu Val Lys Tyr Tyr Asn Gly Glu	1085	1090	1095
Ser Ser Pro Leu Lys Thr Leu Ser Glu Glu Ser Ile Gln Thr Glu	1100	1105	1110
Asp Asn Tyr Ala Ser Leu Glu Asn Phe Lys Val Leu Ser Lys Leu	1115	1120	1125
Glu Gly Lys Leu Lys Asp Asn Leu Asn Leu Glu Lys Lys Lys Leu	1130	1135	1140
Ser Tyr Leu Ser Ser Gly Leu His His Leu Ile Ala Glu Leu Lys	1145	1150	1155
Glu Val Ile Lys Asn Lys Asn Tyr Thr Gly Asn Ser Pro Ser Glu	1160	1165	1170
Asn Asn Thr Asp Val Asn Asn Ala Leu Glu Ser Tyr Lys Lys Phe	1175	1180	1185
Leu Pro Glu Gly Thr Asp Val Ala Thr Val Val Ser Glu Ser Gly	1190	1195	1200
Ser Asp Thr Leu Glu Gln Ser Gln Pro Lys Lys Pro Ala Ser Thr	1205	1210	1215
His Val Gly Ala Glu Ser Asn Thr Ile Thr Thr Ser Gln Asn Val	1220	1225	1230
Asp Asp Glu Val Asp Asp Val Ile Ile Val Pro Ile Phe Gly Glu	1235	1240	1245
Ser Glu Glu Asp Tyr Asp Asp Leu Gly Gln Val Val Thr Gly Glu	1250	1255	1260
Ala Val Thr Pro Ser Val Ile Asp Asn Ile Leu Ser Lys Ile Glu	1265	1270	1275
Asn Glu Tyr Glu Val Leu Tyr Leu Lys Pro Leu Ala Gly Val Tyr	1280	1285	1290
Arg Ser Leu Lys Lys Gln Leu Glu Asn Asn Val Met Thr Phe Asn	1295	1300	1305

Val	Asn	Val	Lys	Asp	Ile	Leu	Asn	Ser	Arg	Phe	Asn	Lys	Arg	Glu
1310						1315					1320			
Asn	Phe	Lys	Asn	Val	Leu	Glu	Ser	Asp	Leu	Ile	Pro	Tyr	Lys	Asp
1325						1330					1335			
Leu	Thr	Ser	Ser	Asn	Tyr	Val	Val	Lys	Asp	Pro	Tyr	Lys	Phe	Leu
1340						1345					1350			
Asn	Lys	Glu	Lys	Arg	Asp	Lys	Phe	Leu	Ser	Ser	Tyr	Asn	Tyr	Ile
1355						1360					1365			
Lys	Asp	Ser	Ile	Asp	Thr	Asp	Ile	Asn	Phe	Ala	Asn	Asp	Val	Leu
1370						1375					1380			
Gly	Tyr	Tyr	Lys	Ile	Leu	Ser	Glu	Lys	Tyr	Lys	Ser	Asp	Leu	Asp
1385						1390					1395			
Ser	Ile	Lys	Lys	Tyr	Ile	Asn	Asp	Lys	Gln	Gly	Glu	Asn	Glu	Lys
1400						1405					1410			
Tyr	Leu	Pro	Phe	Leu	Asn	Asn	Ile	Glu	Thr	Leu	Tyr	Lys	Thr	Val
1415						1420					1425			
Asn	Asp	Lys	Ile	Asp	Leu	Phe	Val	Ile	His	Leu	Glu	Ala	Lys	Val
1430						1435					1440			
Leu	Asn	Tyr	Thr	Tyr	Glu	Lys	Ser	Asn	Val	Glu	Val	Lys	Ile	Lys
1445						1450					1455			
Glu	Leu	Asn	Tyr	Leu	Lys	Thr	Ile	Gln	Asp	Lys	Leu	Ala	Asp	Phe
1460						1465					1470			
Lys	Lys	Asn	Asn	Asn	Phe	Val	Gly	Ile	Ala	Asp	Leu	Ser	Thr	Asp
1475						1480					1485			
Tyr	Asn	His	Asn	Asn	Leu	Leu	Thr	Lys	Phe	Leu	Ser	Thr	Gly	Met
1490						1495					1500			
Val	Phe	Glu	Asn	Leu	Ala	Lys	Thr	Val	Leu	Ser	Asn	Leu	Leu	Asp
1505						1510					1515			
Gly	Asn	Leu	Gln	Gly	Met	Leu	Asn	Ile	Ser	Gln	His	Gln	Cys	Val
1520						1525					1530			
Lys	Lys	Gln	Cys	Pro	Gln	Asn	Ser	Gly	Cys	Phe	Arg	His	Leu	Asp
1535						1540					1545			
Glu	Arg	Glu	Glu	Cys	Lys	Cys	Leu	Leu	Asn	Tyr	Lys	Gln	Glu	Gly
1550						1555					1560			
Asp	Lys	Cys	Val	Glu	Asn	Pro	Asn	Pro	Thr	Cys	Asn	Glu	Asn	Asn
1565						1570					1575			
Gly	Gly	Cys	Asp	Ala	Asp	Ala	Lys	Cys	Thr	Glu	Glu	Asp	Ser	Gly
1580						1585					1590			
Ser	Asn	Gly	Lys	Lys	Ile	Thr	Cys	Glu	Cys	Thr	Lys	Pro	Asp	Ser
1595						1600					1605			

Tyr Pro Leu Phe Asp Gly Ile Phe Cys Ser Ser Ser Asn Phe Leu
1610 1615 1620

Gly Ile Ser Phe Leu Leu Ile Leu Met Leu Ile Leu Tyr Ser Phe
1625 1630 1635

Ile

<210> 11

<211> 378

<212> PRT

<213> Plasmodium falciparum

<400> 11

Gly Glu Ala Val Thr Pro Ser Val Ile Asp Asn Ile Leu Ser Lys Ile
1 5 10 15

Glu Asn Glu Tyr Glu Val Leu Tyr Leu Lys Pro Leu Ala Gly Val Tyr
20 25 30

Arg Ser Leu Lys Lys Gln Leu Glu Asn Asn Val Met Thr Phe Asn Val
35 40 45

Asn Val Lys Asp Ile Leu Asn Ser Arg Phe Asn Lys Arg Glu Asn Phe
50 55 60

Lys Asn Val Leu Glu Ser Asp Leu Ile Pro Tyr Lys Asp Leu Thr Ser
65 70 75 80

Ser Asn Tyr Val Val Lys Asp Pro Tyr Lys Phe Leu Asn Lys Glu Lys
85 90 95

Arg Asp Lys Phe Leu Ser Ser Tyr Asn Tyr Ile Lys Asp Ser Ile Asp
100 105 110

Thr Asp Ile Asn Phe Ala Asn Asp Val Leu Gly Tyr Tyr Lys Ile Leu
115 120 125

Ser Glu Lys Tyr Lys Ser Asp Leu Asp Ser Ile Lys Lys Tyr Ile Asn
130 135 140

Asp Lys Gln Gly Glu Asn Glu Lys Tyr Leu Pro Phe Leu Asn Asn Ile
145 150 155 160

Glu Thr Leu Tyr Lys Thr Val Asn Asp Lys Ile Asp Leu Phe Val Ile
165 170 175

His Leu Glu Ala Lys Val Leu Asn Tyr Thr Tyr Glu Lys Ser Asn Val
180 185 190

Glu Val Lys Ile Lys Glu Leu Asn Tyr Leu Lys Thr Ile Gln Asp Lys
195 200 205

Leu Ala Asp Phe Lys Lys Asn Asn Asn Phe Val Gly Ile Ala Asp Leu
210 215 220

Ser Thr Asp Tyr Asn His Asn Asn Leu Leu Thr Lys Phe Leu Ser Thr
225 230 235 240

Gly Met Val Phe Glu Asn Leu Ala Lys Thr Val Leu Ser Asn Leu Leu
245 250 255

Asp Gly Asn Leu Gln Gly Met Leu Asn Ile Ser Gln His Gln Cys Val
260 265 270

Lys Lys Gln Cys Pro Gln Asn Ser Gly Cys Phe Arg His Leu Asp Glu
275 280 285

Arg Glu Glu Cys Lys Cys Leu Leu Asn Tyr Lys Gln Glu Gly Asp Lys
290 295 300

Cys Val Glu Asn Pro Asn Pro Thr Cys Asn Glu Asn Asn Gly Gly Cys
305 310 315 320

Asp Ala Asp Ala Lys Cys Thr Glu Glu Asp Ser Gly Ser Asn Gly Lys
325 330 335

Lys Ile Thr Cys Glu Cys Thr Lys Pro Asp Ser Tyr Pro Leu Phe Asp
340 345 350

Gly Ile Phe Cys Ser Ser Ser Asn Phe Leu Gly Ile Ser Phe Leu Leu
355 360 365

Ile Leu Met Leu Ile Leu Tyr Ser Phe Ile
370 375

<210> 12
<211> 360
<212> PRT
<213> Plasmodium falciparum

<400> 12

Gln Asp Lys Pro Glu Val Ser Ala Asn Asp Asp Thr Ser His Ser Thr
1 5 10 15

Asn Leu Asn Asn Ser Leu Lys Leu Phe Glu Asn Ile Leu Ser Leu Gly
20 25 30

Lys Asn Lys Asn Ile Tyr Gln Glu Leu Ile Gly Gln Lys Ser Ser Glu
35 40 45

Asn Phe Tyr Glu Lys Ile Leu Lys Asp Ser Asp Thr Phe Tyr Asn Glu
50 55 60

Ser Phe Thr Asn Phe Val Lys Ser Lys Ala Asp Asp Ile Asn Ser Leu
65 70 75 80

Asn Asp Glu Ser Lys Arg Lys Lys Leu Glu Glu Asp Ile Asn Lys Leu
85 90 95

Lys Lys Thr Leu Gln Leu Ser Phe Asp Leu Tyr Asn Lys Tyr Lys Leu
100 105 110

Lys Leu Glu Arg Leu Phe Asp Lys Lys Lys Thr Val Gly Lys Tyr Lys
115 120 125

Met Gln Ile Lys Lys Leu Thr Leu Leu Lys Glu Gln Leu Glu Ser Lys

130	135	140
Leu Asn Ser Leu Asn Asn Pro Lys His Val Leu Gln Asn Phe Ser Val		
145	150	155 160
Phe Phe Asn Lys Lys Lys Glu Ala Glu Ile Ala Glu Thr Glu Asn Thr		
	165	170 175
Leu Glu Asn Thr Lys Ile Leu Leu Lys His Tyr Lys Gly Leu Val Lys		
	180	185 190
Tyr Tyr Asn Gly Glu Ser Ser Pro Leu Lys Thr Leu Ser Glu Glu Ser		
	195	200 205
Ile Gln Thr Glu Asp Asn Tyr Ala Ser Leu Glu Asn Phe Lys Val Leu		
	210	215 220
Ser Lys Leu Glu Gly Lys Leu Lys Asp Asn Leu Asn Leu Glu Lys Lys		
	225	230 235 240
Lys Leu Ser Tyr Leu Ser Ser Gly Leu His His Leu Ile Ala Glu Leu		
	245	250 255
Lys Glu Val Ile Lys Asn Lys Asn Tyr Thr Gly Asn Ser Pro Ser Glu		
	260	265 270
Asn Asn Thr Asp Val Asn Asn Ala Leu Glu Ser Tyr Lys Lys Phe Leu		
	275	280 285
Pro Glu Gly Thr Asp Val Ala Thr Val Val Ser Glu Ser Gly Ser Asp		
	290	295 300
Thr Leu Glu Gln Ser Gln Pro Lys Lys Pro Ala Ser Thr His Val Gly		
	305	310 315 320
Ala Glu Ser Asn Thr Ile Thr Thr Ser Gln Asn Val Asp Asp Glu Val		
	325	330 335
Asp Asp Val Ile Ile Val Pro Ile Phe Gly Glu Ser Glu Glu Asp Tyr		
	340	345 350
Asp Asp Leu Gly Gln Val Val Thr		
	355	360

<210> 13
 <211> 220
 <212> PRT
 <213> Plasmodium falciparum

<400> 13

Gln Asp Lys Pro Glu Val Ser Ala Asn Asp Asp Thr Ser His Ser Thr		
1	5	10 15
Asn Leu Asn Asn Ser Leu Lys Leu Phe Glu Asn Ile Leu Ser Leu Gly		
	20	25 30
Lys Asn Lys Asn Ile Tyr Gln Glu Leu Ile Gly Gln Lys Ser Ser Glu		
	35	40 45

Asn Phe Tyr Glu Lys Ile Leu Lys Asp Ser Asp Thr Phe Tyr Asn Glu
50 55 60

Ser Phe Thr Asn Phe Val Lys Ser Lys Ala Asp Asp Ile Asn Ser Leu
65 70 75 80

Asn Asp Glu Ser Lys Arg Lys Lys Leu Glu Glu Asp Ile Asn Lys Leu
85 90 95

Lys Lys Thr Leu Gln Leu Ser Phe Asp Leu Tyr Asn Lys Tyr Lys Leu
100 105 110

Lys Leu Glu Arg Leu Phe Asp Lys Lys Lys Thr Val Gly Lys Tyr Lys
115 120 125

Met Gln Ile Lys Lys Leu Thr Leu Leu Lys Glu Gln Leu Glu Ser Lys
130 135 140

Leu Asn Ser Leu Asn Asn Pro Lys His Val Leu Gln Asn Phe Ser Val
145 150 155 160

Phe Phe Asn Lys Lys Lys Glu Ala Glu Ile Ala Glu Thr Glu Asn Thr
165 170 175

Leu Glu Asn Thr Lys Ile Leu Leu Lys His Tyr Lys Gly Leu Val Lys
180 185 190

Tyr Tyr Asn Gly Glu Ser Ser Pro Leu Lys Thr Leu Ser Glu Glu Ser
195 200 205

Ile Gln Thr Glu Asp Asn Tyr Ala Ser Leu Glu Asn
210 215 220

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 14
ctcgagctca ggataaaccc

20

<210> 15
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 15
gcggccgcac ttgttagt

18

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

<210> 16
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> misc_feature
 <223> Synthetic Oligonucleotide

<400> 16
 ctcgagctgg agaagcagta act 23

<210> 17
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> misc_feature
 <223> Synthetic Oligonucleotide

<400> 17
 gcggccgcac taaatgaaac tgtata 26

<210> 18
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> misc_feature
 <223> Synthetic Oligonucleotide

<400> 18
 ccgggatcca acatttcaca acaccaa 27

<210> 19
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> misc_feature
 <223> Synthetic Oligonucleotide

<400> 19
 ccggaattca atgaaactgt ataata 26

<210> 20
 <211> 31
 <212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<223> Synthetic Oligonucleotide

<400> 20

ccgggatccg ggatgccctg gctcagtgcc a

31

<210> 21

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<221> misc_feature

<223> Synthetic Oligonucleotide

<400> 21

ccggaattct tagatccgct gctctttgac ctc

33

<210> 22

<211> 42

<212> PRT

<213> Homo sapien

<400> 22

Gly Met Pro Trp Leu Ser Ala Thr Thr Val Arg Ser Val Thr His Ala
1 5 10 15

Asn Ala Leu Thr Val Met Gly Lys Ala Ser Thr Pro Gly Ala Ala Ala
20 25 30

Gln Ile Gln Glu Val Lys Glu Gln Arg Ile
35 40

<210> 23

<211> 51

<212> PRT

<213> Homo sapien

<400> 23

Asp Arg Ile Leu Leu Leu Phe Lys Pro Pro Lys Tyr His Pro Asp Val
1 5 10 15

Pro Tyr Val Lys Arg Val Lys Thr Trp Arg Met His Leu Phe Thr Gly
20 25 30

Ile Gln Ile Ile Cys Leu Ala Val Leu Trp Val Val Lys Ser Thr Pro
35 40 45

Ala Ser Leu
50

<210> 24
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 24
ccgggatcct ccgtcaccca tgccaacgcc

30

<210> 25
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 25
ccgggatccg accgcatctt gcttctgttc a

31

<210> 26
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 26
ccggaattct tagatctgga tgcccgtgaa

30

<210> 27
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 27
ggccatatgg atgatacatc acatt

25

<210> 28
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 28
ggcctcgagg ttttctaaac tggcat 26

<210> 29
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 29
ggccatatgt ttaaagtatt aagta 25

<210> 30
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 30
ggcctcgagt tctcctgtta ctacttg 27

<210> 31
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 31
gccgaattcg cagtaactcc ttccg 25

<210> 32
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<223> Synthetic Oligonucleotide

<400> 32
gccggatcca atgaaactgt ataata

26

<210> 33
<211> 334
<212> PRT
<213> Plasmodium falciparum

<400> 33

Gln	Asp	Lys	Pro	Glu	Val	Ser	Ala	Asn	Asp	Asp	Thr	Ser	His	Ser	Thr	1	5	10	15
Asn	Leu	Asn	Asn	Ser	Leu	Lys	Leu	Phe	Glu	Asn	Ile	Leu	Ser	Leu	Gly	20	25	30	
Lys	Asn	Lys	Asn	Ile	Tyr	Gln	Glu	Leu	Ile	Gly	Gln	Lys	Ser	Ser	Glu	35	40	45	
Asn	Phe	Tyr	Glu	Lys	Ile	Leu	Lys	Asp	Ser	Asp	Thr	Phe	Tyr	Asn	Glu	50	55	60	
Ser	Phe	Thr	Asn	Phe	Val	Lys	Ser	Lys	Ala	Asp	Asp	Ile	Asn	Ser	Leu	65	70	75	
Asn	Asp	Glu	Ser	Lys	Arg	Lys	Lys	Leu	Glu	Glu	Asp	Ile	Asn	Lys	Leu	85	90	95	
Lys	Lys	Thr	Leu	Gln	Leu	Ser	Phe	Asp	Leu	Tyr	Asn	Lys	Tyr	Lys	Leu	100	105	110	
Lys	Leu	Glu	Arg	Leu	Phe	Asp	Lys	Lys	Lys	Thr	Val	Gly	Lys	Tyr	Lys	115	120	125	
Met	Gln	Ile	Lys	Lys	Leu	Thr	Leu	Leu	Lys	Glu	Gln	Leu	Glu	Ser	Lys	130	135	140	
Leu	Asn	Ser	Leu	Asn	Asn	Pro	Lys	His	Val	Leu	Gln	Asn	Phe	Ser	Val	145	150	155	
Phe	Phe	Asn	Lys	Lys	Lys	Glu	Ala	Glu	Ile	Ala	Glu	Thr	Glu	Asn	Thr	165	170	175	
Leu	Glu	Asn	Thr	Lys	Ile	Leu	Leu	Lys	His	Tyr	Lys	Gly	Leu	Val	Lys	180	185	190	
Tyr	Tyr	Asn	Gly	Glu	Ser	Ser	Pro	Leu	Lys	Thr	Leu	Ser	Glu	Glu	Ser	195	200	205	
Ile	Gln	Thr	Glu	Asp	Asn	Tyr	Ala	Ser	Leu	Glu	Asn	Phe	Lys	Val	Leu	210	215	220	
Ser	Lys	Leu	Glu	Gly	Lys	Leu	Lys	Asp	Asn	Leu	Asn	Leu	Glu	Lys	Lys	225	230	235	
Lys	Leu	Ser	Tyr	Leu	Ser	Ser	Gly	Leu	His	His	Leu	Ile	Ala	Glu	Leu	245	250	255	

Lys Glu Val Ile Lys Asn Lys Asn Tyr Thr Gly Asn Ser Pro Ser Glu
260 265 270

Asn Asn Thr Asp Val Asn Asn Ala Leu Glu Ser Tyr Lys Lys Phe Leu
275 280 285

Pro Glu Gly Thr Asp Val Ala Thr Val Val Ser Glu Ser Gly Ser Asp
290 295 300

Thr Leu Glu Gln Ser Gln Pro Lys Lys Pro Ala Ser Thr His Val Gly
305 310 315 320

Ala Glu Ser Asn Thr Ile Thr Thr Ser Gln Asn Val Asp Asp
325 330

<210> 34

<211> 376

<212> PRT

<213> Plasmodium falciparum

<400> 34

Ala Val Thr Pro Ser Val Ile Asp Asn Ile Leu Ser Lys Ile Glu Asn
1 5 10 15

Glu Tyr Glu Val Leu Tyr Leu Lys Pro Leu Ala Gly Val Tyr Arg Ser
20 25 30

Leu Lys Lys Gln Leu Glu Asn Asn Val Met Thr Phe Asn Val Asn Val
35 40 45

Lys Asp Ile Leu Asn Ser Arg Phe Asn Lys Arg Glu Asn Phe Lys Asn
50 55 60

Val Leu Glu Ser Asp Leu Ile Pro Tyr Lys Asp Leu Thr Ser Ser Asn
65 70 75 80

Tyr Val Val Lys Asp Pro Tyr Lys Phe Leu Asn Lys Glu Lys Arg Asp
85 90 95

Lys Phe Leu Ser Ser Tyr Asn Tyr Ile Lys Asp Ser Ile Asp Thr Asp
100 105 110

Ile Asn Phe Ala Asn Asp Val Leu Gly Tyr Tyr Lys Ile Leu Ser Glu
115 120 125

Lys Tyr Lys Ser Asp Leu Asp Ser Ile Lys Lys Tyr Ile Asn Asp Lys
130 135 140

Gln Gly Glu Asn Glu Lys Tyr Leu Pro Phe Leu Asn Asn Ile Glu Thr
145 150 155 160

Leu Tyr Lys Thr Val Asn Asp Lys Ile Asp Leu Phe Val Ile His Leu
165 170 175

Glu Ala Lys Val Leu Asn Tyr Thr Tyr Glu Lys Ser Asn Val Glu Val
180 185 190

Lys Ile Lys Glu Leu Asn Tyr Leu Lys Thr Ile Gln Asp Lys Leu Ala

116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999

```
<210> 35
<211> 114
<212> PRT
<213> Plasmodium falciparum

<400> 35
```

Asn 1	Ile	Ser	Gln 5	His	Gln	Cys	Val	Lys 10	Lys	Gln	Cys	Pro	Gln	Asn 15	Ser
Gly	Cys	Phe 20	Arg	His	Leu	Asp	Glu 25	Arg	Glu	Glu	Cys	Lys 30	Cys	Leu	Leu
Asn	Tyr 35	Lys	Gln	Glu	Gly	Asp 40	Lys	Cys	Val	Glu	Asn 45	Pro	Asn	Pro	Thr
Cys 50	Asn	Glu	Asn	Asn	Gly 55	Gly	Cys	Asp	Ala	Asp 60	Ala	Lys	Cys	Thr	Glu
Glu 65	Asp	Ser	Gly	Ser 70	Asn	Gly	Lys	Lys	Ile 75	Thr	Cys	Glu	Cys	Thr 80	Lys
Pro	Asp	Ser	Tyr 85	Pro	Leu	Phe	Asp 90	Gly	Ile	Phe	Cys	Ser 95	Ser	Ser	Asn

Phe Leu Gly Ile Ser Phe Leu Leu Ile Leu Met Leu Ile Leu Tyr Ser
 100 105 110

Phe Ile

<210> 36
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> misc_feature
 <223> Synthetic Oligonucleotide

<400> 36
 ccggaattcg ggatgccctg gctcagtgcc a 31

<210> 37
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> misc_feature
 <223> Synthetic Oligonucleotide

<400> 37
 ccgggatcct tagatccgct gctctttgac etc 33

<210> 38
 <211> 1287
 <212> DNA
 <213> Plasmodium falciparum

<400> 38
 atgtgtaata aattgtcaag gggtagtaat atgaacaagt cagaattagg agataggagt 60
 acaaaaatga aaggaaagat ttgctcaagt tacgtaaaat atatatgttt aacaatatgt 120
 gttataggaa tgttatgtat aaaattaagg gataaatatg aaggatatgc tgcttcaggt 180
 atacaaaaca ataatgtata tttaagaaat ttatcagagt tacaaaaggg aaatcaacct 240
 tgcttgagac atacaaacag aacggataat tcaaagatga acaaagtcaa aaataataat 300
 cagacagaaa ataatgacaa caaaaaaag ctaggtaata aggaagataa ccagggaaaa 360
 aataaaaata ataataataa agaaaaacaa aatgacatta ataaaagagg aacacaaaat 420
 accgaaacta aaaaaagtaa taaaaaatta agtcaggact ataatgatgt aaataagaaa 480
 tttaaaaaag aacaaatgaa aaatttagtt aattcattag atgaaattcc accccgaaac 540
 gatatggaag agatatggaa tcatgccgtt aaaacagcta atagtggaa aagcagaatt 600

aaaaaaaaat taaaagaata tgaacaaaaa tatggaagat gctatgaaga gagaccaa at 660
cgtttttgat catatgaaca ggtgttaata agccagccac atgaatttaa tgaaagatta 720
aaagttcatg aaaatgatta tactgttttt ttttatgaac tacttgataa agaccctaca 780
cttgatgaaa taaaaaatta tattacttca tttttagaag gttttcaaaa tttgatagac 840
tttcttttta ataaatataa aattatattt ttgcaaaaa ctacggaaat tcctatagac 900
ggaactattt atgataccag taagaaagat atgaagaaaa ataaaaacaa aaagcaaa at 960
ataaaaacag gaggtaaaaa ggaagaggta aaacaagaag gtaaaaagga agaggtaaaa 1020
caagaaggta aaaaggaaga ggtaaaaacaa gaaggtaaaa aggaagagggt aaaacaagaa 1080
ggtaaaaagg aagaggtaaa acaaggagggt aaaaaggaag aggtaaaaca aggaggtaaa 1140
aaggaagggt taaaacaagg aggtaaaaag gaagaggtaa aacaaggagg taaaaggagg 1200
gaggtaaaac aaggaggtaa aaaggaggag gtaaaacaag gaggtaaaaa ggaagagggtg 1260
aaaaaagaat taaaaaaaaa caattaa 1287

<210> 39

<211> 3576

<212> DNA

<213> Plasmodium falciparum

<400> 39

atgatatttg ttaagagtaa gattttatat ttcctaaaat ggccttctgt tgccatagag 60
gaaaatttta gtggttcctt taaatgttta ttcaaaaaca agaggaataa atataatggt 120
gaaatattaa agaatgatta taatacgcta acagaaaagtc ataataaat taatagaagg 180
tctagaaatt taggagcgaa tccagaatcc attagttag gttatgaatt aagtgaagag 240
gatgaaggaa ataaaaatga tctaataaat agtgctacag atgtatcaac agaattagag 300
aattttaaag aacgtttatt tcctgaacta gaattatata caaacgatca aaattcaaga 360
aataatactc caaatttacg taagggttct ttgggatttg atagttttaa aaaattggaa 420
ttaggaacac taaatcaatt tgataaagat aaaatgatta atctgaaaga tgaaaccaat 480
atgaatgaat ttgaaggatt tctaggaaga aattcaatgg ctagtaatgt agttacatcc 540
gaattatttg atgaaccagt agatgatagt agtagtacta ctactagcac aggtacaaaa 600
ttgcaaaacg ttccatcgaa tgataataac ggtgaacttt tgaaagatga acctatagat 660
gattatataa ataataattc gaaagttgaa tcggaagata attattatgc acaacagaat 720
atgcaaagtc agtcgaaaga taattatgct tcagaacaaa atgtagcaga tcaatcgaca 780
gataattatc ctacgcaaca tgatgtacca gttcaattga gagacaatta tgcttcagaa 840
caagagtatt ttgatagagg tgaacaattg aatgacgtaa gtgcagataa caatacaagt 900

aataaattga aagacgaacc tgtagataac aatacaagta ataaattgaa agacgaacct 960
gtagataaca atacaagtaa taaattgaaa gacgaacctg tagatgacaa tacaagtaat 1020
aaattgaaag acgaacctgt agataacaat acaattaata aattgaaaga cgaacctgta 1080
gatgacaata caagtaatat tttgaaagac gaacctgtag atgaccatgc aggtaaacat 1140
ttgaaagatg aacctgtaga tgaccatgca ggtaaacata tgaaagatga acccgttgat 1200
attgatagaa caaatattaa aaaggggttta aatgaacaac atgttaatcc atggactaca 1260
acattagcag atttaaaaaa tattaataat agtatgaaaa tagaaaaaaa taataaaagt 1320
aatgaacagg taaaaaatac gagcgttagc aaatcatgtg atattataaa accttccaag 1380
tttaataaaa agaacctttt tgagcaaaga cttcaaagtg ttgaaggtaa aaactttttt 1440
gaaggaagaa gtcaaaattht agaaggaaga agtaatthttg atgagagatc tcaaattgta 1500
gaacaaagga gaaactthtga tgacagggac cagaacataa tggatagaaa aaattthtgat 1560
gaaagaaatc aacaggthta tgacagaaga aattthtgatg aaagaaatca acaggthta 1620
gacagaagaa atthttgatga cagggatcag aacgtaatgg atagaagaaa cthttgatgaa 1680
agaaatcaac aggtthtaatga cagaagaaat thttgatgaaa gaaatcaaca ggtthtaatgac 1740
agaagaaatt ttgatgacag ggatcagaac gtaatggata gaagaaactt tgatgaaaga 1800
aatcaacagg tthaatgacag aagaaacttht gatgaaagaa atcaacagggt taatgacaga 1860
agaaacttht atgacaggga tcagaacgta atggatagaa gaaactthtga tgaaagaaat 1920
caacaggthta atgacagaag aaattthtgat gaaagaaatc aacaggthta tgacagaaga 1980
aattthtgatg aaagaaatca acatgtthta gacagaagaa atthttgatga aagaaatcaa 2040
aatgtthtaatg atagaagaaa thttgatgaa agaaatcaaa atgtthtaatga tagaagaaat 2100
thttgatgaaa gaaatcaaca agthtaatgac agaagaaatt ttgatgaaag atatcaaaaat 2160
gtthtaatgaga gaagaaattht tgatgagaga aatcaacaag tthaatgacag aagaaattht 2220
gatgagagaa atcaacatgt taatgagaga tatcaaaatg tthaatgatag aagaaattht 2280
gatgaaagaa atcaacaagt taatgacaga agaaatthttg atgagagaaa tcaacatgtt 2340
aatgagagaa gaaatthttga tgagagaaat caacatgtta atgagagata tcaaaatgtt 2400
aatgatagaa gaaatthttga tgaaagaaat caacatgtta atgagagacg aaactthtgat 2460
caaagggctc caaatgtaga agagcgaaga tatatggatc caagaaatcc gaatattcca 2520
tatgtaaggt ttccacatca tcagtgggggt caaggaatga tgtatggaag accatattat 2580
ccttgggttc catttatggg agatggaaga ggttataatt thttataatcc tcatcaacat 2640
atggtatatg gaagacccta ttattgggta cctccacccc cagcgttaga atatacaaaa 2700

ggattttaatc caatggaaca gagaagagaa gaagacaggg gacatatggg aggaagaggt 2760
 agtagatacc cagaagagga aagatataat tataacaata agagaagtaa tagtatacct 2820
 gaaggacgaa attatgaaga gaatgcatat gagagaggag gaggggaataa taaatgggat 2880
 tttcgaaata tgtatgatag attaagagat gaagatgaaa atgattatga ccaacctcct 2940
 agtacatctt cttctaatag aggaagaggt aatgaaagat atagtcaatc aagagataga 3000
 agagaagaaa ggaataatta taatagtgat tattatacta gaggaaatga gagaacatat 3060
 aataattcaa atgtaacaag tagttcaa at agagaattaa taccttaca aaaagagata 3120
 ttaccttttg gtgtagtaa ttctgaattg gaagataaat taacagaaga ggaattaaat 3180
 gaaagaataa gaagattaga ttatacagta tctgttaaag atatgtttat attatggaat 3240
 catatacttg cacatgaaag aaaaaaatat acaaaaatgc agaataat t aatgtattat 3300
 agtcaatatt tagaaaaaac atatcttggt cctacagctt ttagaaaaaa atactggtgg 3360
 aggggttcatt atatgttgac cgaagaagta gttaaagag aaaggacaga taatttagat 3420
 ttccatcaat tcttacgtaa aggttcttgt gaaaaacgtg aatttttata ttttattaat 3480
 tctaaaagaa aaggatgggc tgatcttacg gaaacaatga aaaatatatg gatgggaaaga 3540
 ttaacttata aaatgagaaa atatagtgga gcataa 3576

<210> 40
 <211> 903
 <212> DNA
 <213> Plasmodium falciparum

<400> 40
 atgtgttcta caaataagaa tttagcttgc tgcaaaggag ataatgtttt cgatggacaa 60
 ataaatggaa atgaatcata ccccaagta gtaaataaac aattaccacc taaggtatta 120
 gaacccataa ttcaaaataa aatagttgaa atacccaaag aagtatatct tgaaaagatt 180
 gtagaagttc ctcaaaataa aactgtagaa agaatagtgg aacagataag gcccgttatt 240
 aagtacaaaa atgtgtataa acccaaaatt gtatatgttg aaaaagtaaa aaatgtagat 300
 aaaattatat accaagagaa aattgttgaa gttccacaaa taaaaactgt tgaaaaaatt 360
 gtagaagtcc cagtatatgt taacagagaa agaattatta ctgttccaag atatatgggtt 420
 gtagaaaaag taatacccggt attaaaaaca tccaaaagag aaagtataat ggaagttcca 480
 gaagttaatt gccacacat tgatataagt aaagaagtag aagataaaga agaaatacca 540
 attaacgaat taaaagagaa ccaaaccata agtcttgctg atgaaaaaga aatccaaata 600
 ttaaagtact taactagcca aaaggtagat tctaattgcaa ccattaatat ggaaggtgaa 660

caagatacaa ctgtagatac tattacacaa gaaaacttct gtggaacagt tagttgtaat	720
ttcttaccaa attatccaaa ctctccaaa attggaaacc cattatgcaa aggaggtcca	780
gaaaaagaaa aacgtttttc aagtatcagc atctacaaat caaaggattc aggattccca	840
agtataagaa ttgcaaaaac tccacaaatg ttccaaagaa atctttactg ttcatatgct	900
taa	903

<210> 41
 <211> 1203
 <212> DNA
 <213> Plasmodium falciparum

<400> 41	
atgaagaatg aaaatatggg taattccata ttttattatt cctgttatgt tattatagtt	60
cttactataa tattgtctaa gtttgttgta atccctttga tggctcaa at gttttgtac	120
acattcatta caatatatat tggaagtc at gatagtttga aacaattaga aattgatgat	180
aaaacaaaa agtcagacaa cataacagcc tatgatgcta tgatgtttcc agtaattgga	240
tctgcagctt tgcttacttt atatttcgca tataagttct tagatccgtt ttatgtgaat	300
ttattattga ctctttacct aaccttggcg ggtgtatttt cttacaggg tgtatttaca	360
acaatcttgg aacctgtttt tccaaatttt tttaaaaaag atgaatatgt caaacattc	420
aaattaccaa attttatata taaagaacct attgtattca atactaataa aggagaaata	480
gtttgcttaa tactcagctt tgctatagga ttgcgttgga tattttataa agacttcatt	540
acacataacg ttttggcagt ttctttttgt tttcaagcca tatcttttgt aattcttagc	600
aactttttta taggattctt attattatct ggtttgtttg tatatgatat tttctgggtt	660
tttggaaacg atgttatggg tacagtagct aagtcttttg aagctccagt aaaattgtta	720
ttcccagttt cgagtgatcc agtacattac agtatgcttg gtttaggaga tattattata	780
ccaggaatat tgatgtcttt atgtttacgt tttgattatt atttatttaa gaataacata	840
cataaaggaa acttaaagaa aatgtttaat gatatatcta tacatgaatc tttcaagaaa	900
tattattttt ataccattat aatattttac gaattagggt tagttgttac atattgtatg	960
ctcttttatt ttgaacatcc tcaaccagct ctcttttatt tggtagctgc atgtatactt	1020
gccatattag cttgttccat atgcaaaaga gaatttaa at taatgataaa atatcaagaa	1080
attacagaca aatccaatac tgtagatgat gcaagtaaga ataaaaaaaa agataaggaa	1140
gaaatcccca aaattcaaga gacccagtg tcaaagta aaaaaagaat taccaataaa	1200
tga	1203

<210> 42
<211> 3996
<212> DNA
<213> Plasmodium falciparum

<400> 42
atggtgttag tagtagagta tcataatata aatactcctg ttggaaaata ttcagagttg 60
gagaatttga aagaagaaaa ggaaaaaaga ttatataata atttggaata tgtaaattta 120
ttagacataa gaacttttga aaataaatct atatatgtat cttcagattt attgaatttt 180
ttaaaatgct attcaaattt gaatatcaac ttgaataagg ttccttatga tttggtctat 240
tcattttttgc ttgatggaga atttatattta ggatatgata tatctgtttt tattttatta 300
gtaaaagcag aacattttga atattgtaga agaatagata atgaaaatag tgataagaaa 360
gaaagtttta gaacaaaaaa taaatcaaca attaaagat catcacagat agatgatgaa 420
gataatttac aaggattgtt gattaaagaa aaagaagatt atttatcatt tttgaatgaa 480
aataatgagg ctttaaaaca atatatggaa tccgaaaaaa gaggaaatcc tttgtggcat 540
ttggatgaat ctaaatatat ggataaagat tggatgatg aagaagattc atcatttata 600
tttaagccta cttttaatta tttaggaaag aataataata ataataataa tcataataat 660
aataatgctt tttctaattt tgtaatgggc aacttatctt ctgataatat ttctggatgc 720
ttctttgtgg agaaattaaa tgcttatctt ttcgccatgt tggataaatg tagcaataaa 780
acagttatat ctgtttttcc atatgaaaaa tttggaagac acgaatccag aaatttagct 840
atccaatttt cccaatatga ggactatatg cataggataa ttgaggacag actttatgcg 900
aatattcaaa ataatctccc aagtgttcac aatatgaaga atatgagtaa tatgaataat 960
ataaacaata ataataaaga tattattatt aatagaagtg gtatttctaa tggtaatagc 1020
caaagtgttc cttgctttga aaatatattg gattatgata aattaaaatt tgtggaatat 1080
ataaattcct ttagtgatgt aaagaaatca tcttcattcg atattattgg tagcagcaaa 1140
aatatatatg aacaaggtga aaacctgaag aactattgta tatatcataa taataatttt 1200
gaaagtggat ttgaaaatta tatttttgga aataaacaac cattggaatt aattgaaaat 1260
catttcgaca taatggaaaa cattaaaggg atgtatgata atacaaatca ggaggaaatg 1320
aatttcaata atgtttcagg gttgttgagg gaagacaatt caaatatgaa tgaaatatac 1380
ctaacgaggg ataatacata taataattat catgaaaatg aagaaaatat atatagtatt 1440
aatattaaat atattaataa tcattttaat aataaggatg atatgattat gaaatgtaaa 1500
aatatgaagg gatctatttc tatggataat aatagtagta atagtaatag taataatact 1560
cattttgaga aaacattgga atccataaat cctgatgacc ataataattt taacagtgaa 1620

atggattcta tgaaaaatga aaataacgat gaagaagaac aaacagccac aagtatttat 1680
aacatttttag gaaagattgg aaaagataca tatattaaaa gatgtagtag taattataac 1740
tatgataaca ataatggata tagtaacgaa agtagtgaca attataataa tgggtataat 1800
gatagtacag ataataataa tggatataat agtaatagta gctataatag taataataat 1860
gaagatgata ataacaataa taataataat gatgagaatt gtgataataa taataaccat 1920
aataataata attataataa taataataat tatggtaaca ataataataa caacaataat 1980
aataaggaca ataataataa tgatggaaat ggtagtagta ataataataa taatgatgat 2040
gatgacgaag aagaagagga tgatgaagat gataacaata ataataatga tgatgataat 2100
atgagtgata acgaagaaat ggaagataat gatgaagata acgatgagta taataatagt 2160
aatgatagtt ataaatatga agaaaaagat agtaatcatg aaaaggattt gaaaaagat 2220
ataatagaag gagatatgat taattctggt aaatatgata aaaacattgg tcatcatact 2280
acaaataaga gtgaaattag tactaactat tttgagaaca gttgtaacat gagtgtaaat 2340
aatagtaata acgaagcata tgatgataat tgtaataatg gttttatgaa tcatgacgaa 2400
ggattaactc ttaataatgg gaatgtttca aataataaat gcgataattat aataccagaa 2460
gatggaagtg ttatgtatga aaatatgatt aacagaggaa acggtcttac aagtaacatt 2520
aacaataata ataatgtaag taataataat agtataagtt gcaatgcaga tgataatgta 2580
tataataata taaataatta tataaacaca tatatggaaa ctacaaacaa taagaatcat 2640
attgagaata gatgtaatca agattcatac agtacgaatg aagaaccttt atccaatcat 2700
tctataaatg atccaggaaa aataaaagat ggcataatgt atgatggaaa tgatttggat 2760
atgaatggta cccaagaaca tagtaaagaa gaagggatgg atgtttttga acctaatatt 2820
ttcgaattaa aaagaaatag ttcgatgggt caaaataaac atttagaacc aggagttcaa 2880
aagaaaatta gtaaaaaaag aagtaaagtg aaacatgaaa gaaatagtaa aatacttgat 2940
gatgaaaaga aagaagtatt aaataaagta tctcaaataa cacgagttgg aggtgtttgt 3000
tttgataaga atagacaaag atggattgca cattggaaaa ttgacggaaa atatcataaa 3060
cattatttcc ctattagtca atatggattt gaaaatgctc gagaaagagc agttagttgt 3120
aggaaacaag ctgaaaaact atttaactta ccagaaattc aaccaagaaa tagatggaat 3180
caaataaaaag tcaatggtac ttctcacata aaaaaagctg caaaattacc aagatgtgaa 3240
ggatttggat atgatgaatt gtctcaaagt tgggttagta cttttgttgt tcataaaaaa 3300
ttttctattg aagaacttgg attttatgaa gcaagggaaa aagctatata ttgtagaaaa 3360
acatttgaag aggtaaatgt tcatgatgat tatgaatgtt tattaatatga ccgattaggt 3420

atggattcta tgaaaaatga aaataacgat gaagaagaac aaacagccac aagtatttat 1680
aacatttttag gaaagattgg aaaagataca tatattaaaa gatgtagtag taattataac 1740
tatgataaca ataatggata tagtaacgaa agtagtgaca attataataa tgggtataat 1800
gatagtacag ataataataa tggatataat agtaatagta gctataatag taataataat 1860
gaagatgata ataacaataa taataataat gatgagaatt gtgataataa taataaccat 1920
aataataata attataataa taataataat tatggtaaca ataataataa caacaataat 1980
aataaggaca ataataataa tgatggaaat ggtagtagta ataataataa taatgatgat 2040
gatgacgaag aagaagagga tgatgaagat gataacaata ataataatga tgatgataat 2100
atgagtgata acgaagaaat ggaagataat gatgaagata acgatgagta taataatagt 2160
aatgatagtt ataaatatga agaaaaagat agtaatcatg aaaaggattt gaaaaagat 2220
ataatagaag gagatatgat taattctggt aaatatgata aaaacattgg tcatcatact 2280
acaaataaga gtgaaattag tactaactat tttgagaaca gttgtaacat gagtgtaaat 2340
aatagtaata acgaagcata tgatgataat tgtaataatg gttttatgaa tcatgacgaa 2400
ggattaactc ttaataatgg gaatgtttca aataataaat gcgataattat aataccagaa 2460
gatggaagtg ttatgtatga aaatatgatt aacagaggaa acggtcttac aagtaacatt 2520
aacaataata ataatgtaag taataataat agtataagtt gcaatgcaga tgataatgta 2580
tataataata taaataatta tataaacaca tatatggaaa ctacaaacaa taagaatcat 2640
attgagaata gatgtaatca agattcatac agtacgaatg aagaaccttt atccaatcat 2700
tctataaatg atccaggaaa aataaaagat ggcataatgt atgatggaaa tgatttggat 2760
atgaatggta cccaagaaca tagtaaagaa gaagggatgg atgtttttga acctaatatt 2820
ttcgaattaa aaagaaatag ttcgatgggt caaaataaac atttagaacc aggagttcaa 2880
aagaaaatta gtaaaaaaag aagtaaagtg aaacatgaaa gaaatagtaa aatacttgat 2940
gatgaaaaga aagaagtatt aaataaagta tctcaaataa cacgagttgg aggtgtttgt 3000
tttgataaga atagacaaag atggattgca cattggaaaa ttgacggaaa atatcataaa 3060
cattatttcc ctattagtca atatggattt gaaaatgctc gagaaagagc agttagttgt 3120
aggaaacaag ctgaaaaact atttaactta ccagaaattc aaccaagaaa tagatggaat 3180
caaataaaaag tcaatggtac ttctcacata aaaaaagctg caaaattacc aagatgtgaa 3240
ggatttggat atgatgaatt gtctcaaagt tgggttagta cttttgttgt tcataaaaaa 3300
ttttctattg aagaacttgg attttatgaa gcaagggaaa aagctatata ttgtagaaaa 3360
acatttgaag aggtaaatgt tcatgatgat tatgaatgtt tattaatatga ccgattaggt 3420

ttacgtaatg aggaaaaaga tgaattatct gatctaatta atatagataa aaatgcattg	3480
gataatctag aactggaaac atctgttcat aataataata aagtgaaaca taataataac	3540
aacaacaaca acaataataa taataataat aataataata ataataattc tgaaaaaatg	3600
agaattaaaa ataatgattt ttcagttgat aataataatg aaaatggttg aacaggagaa	3660
attaaaaat ccaatgataa atatttataa ataacacaag aagctattga aatgattcta	3720
agtaatatca aacataaatc cttaccagaa attaaaatga aattaattga taaacaaaag	3780
tttgaaaatt ataatacatt actagataaa catttttaaat ttattacatc tgtaaaaaac	3840
atttcacagt taagacgata tatatcactc tttcacaaat ttataattta tcatacactt	3900
cctcataata tttctttaag gaaacaatta tttattatcg aagctttaga atgggtcttcg	3960
tttttttcag gtgcagctag cgaaaaagtg gaataa	3996

<210> 43
 <211> 876
 <212> DNA
 <213> Plasmodium falciparum

<400> 43	
atggaagtaa catcaacctt attagaaaag ggtaaaaact ttgcccaaga tccatctgag	60
gtttttcctg agtcaaaaaa attttttttt tctgcaattg tgtgcttaaa aacaaatttc	120
gacaaaagga caggagcctt aggttatcta aatctaagtt atggaatggg tattatattc	180
ggtagtttct tagcaggtgt tatggtaaac tttgtaggat caagaggaaa tttattaatt	240
gcattattat cccaattaat agctttatgt ataagtacaa cgtagaaga agatccgaaa	300
ttattgaaga gctctaattg ggataaaatg aaaatgtcag aaatactttt aagtattaaa	360
aatgaataca taagagtatt aaattttatt aaaaaaacat atggaatatg tttattaata	420
ctttttggat tattacctat attaatgaca aaatttgctt ttgctcctgt gggtgtagat	480
atgttcaa at taactccttc acacacatca tatctaata cttatgcagg tataataact	540
attattgctg aagggatact tgctccttat ttaagttctt tactagggga tatgatttgt	600
tgtaaatatt cgataccact aacattaaca ggatttttat tattatcatt atgtggcgct	660
aacgaatcac ttgttcttat atttatgtct ataccattat gtggaggtgc tttattatat	720
atatgtggaa ctagccaaat gacaaaacga gtggaagaat cagaattggg ttcgattatt	780
ggtttaata catctctttt ttatgccgtt acaataatag ctccatatat tgcctttaa	840
tcatatatag ccttgggatt gggattatat tggtaa	876

<210> 44
 <211> 2712

<212> DNA

<213> Plasmodium falciparum

<400> 44

atgcgtat	ttt	gggga	aaaga	tgtatt	cgcc	ggtttt	gtaa	caaaga	aaatt	aaaaac	cctt	60	
ttagact	gta	at	tttgct	ct	ttattata	aat	tttaa	aggaa	atggccc	aga	cgctgg	atcc	120
tttttag	att	ttgtgg	atga	acctga	acaa	ttttact	gggt	tcgtgg	aaaca	tttttt	gtct	180	
gtgaaat	ttc	gagttc	caaa	gcattc	ttaaa	gataaaa	aca	ttcata	at	ttt	tacac	cttgc	240
ttaaatag	at	catggg	tatc	tgaat	ttttta	aaagaat	atg	aagagc	catt	tgtaa	atcct	300	
gttatgaa	at	ttctag	ataa	agagcaa	aga	ttat	ttttta	catata	actt	tggag	atgta	360	
gaaccaca	ag	gtaaata	tac	atatttc	cca	gttaagg	aat	ttcaca	aaata	ttgtata	acta	420	
ccccctta	a	taaaaa	actaa	tataaa	agat	ggtgaa	agt	gagaat	tttt	aaaata	tcaa	480	
ttaaataa	ag	aagaata	tataa	agtttt	tctt	cggtt	g	gttccca	aat	gacag	ctata	540	
aaaaat	ttat	attcaac	agt	tgaag	atgaa	caaaga	aaac	aattat	tataa	agttat	cata	600	
gaaaatg	aaa	gtacaa	atga	tatat	ctgtt	caatgc	ccaa	cttata	aacat	aaaatt	acat	660	
tatactaa	ag	aatgtg	ctaa	tagta	ataat	atattaa	aat	gtattg	atga	atttct	taga	720	
aaaacat	gtg	aaaaga	aaac	cgaaag	taaa	caccctt	ctg	cagact	tatg	tgaac	actta	780	
caatttc	ttt	ttgaat	catt	aaaga	atcct	tacttg	gata	atttta	aaaaa	atttat	gact	840	
aacagt	gatt	ttacct	taat	caaact	caa	tcagt	atgga	atgtac	cctat	attcg	atata	900	
tataaac	caa	aaaatt	at	agata	gtgc	caaaatt	tag	atacag	aatg	tttta	agaaa	960	
ttaaatag	ca	aaaatt	tgat	cttctt	atca	ttccat	gatg	atatac	cctaa	caatcc	atat	1020	
tacaatg	tgg	aactt	caaga	aattgt	tataa	ttgagt	acct	acacata	tag	catatt	tgat	1080	
aaattgt	tata	atttct	tctt	cgtttt	tataa	aaaagt	ggag	ctccca	ttag	tccagt	gtca	1140	
gttaaaga	aat	tgagcc	ataa	tatcac	cgat	tttag	cttta	aagagg	acaa	cagtga	aaatt	1200	
caatgc	caaa	atgta	agaaa	gagttt	tagat	ttaga	agtag	atgtag	aaac	aatgaa	aggt	1260	
attgcg	gcag	aaaagt	tatg	taagat	catt	gaaaa	attta	ttctta	caaa	agatga	tgca	1320	
agtaaacc	ag	aaaag	agtga	tataca	caga	ggtttc	cgta	tcttat	gtat	attaat	atct	1380	
actcat	gtgg	aagctt	tataa	catagt	taga	caattat	tataa	atatgg	aaag	tatgat	atca	1440	
ttaaca	agat	atactt	catt	atatat	ccat	aaatttt	ttta	agagt	gtaac	attatta	aaaa	1500	
ggaaact	ttt	tatata	aaaaa	caata	aggct	ataag	atatt	cacgt	gcttg	tagtaa	agcc	1560	
tcattac	acg	ttccat	ccgt	tttata	caga	agaaat	atat	atattc	ctga	aacatt	ctta	1620	
tcattat	att	taggatt	atc	aaattt	tagta	tcttca	aatc	ctagtag	tcc	atttttt	gaa	1680	

tatgcaatta tagaattttt agtaacttat tacaataagg gttctgaaaa attcgttctt 1740
tattttatat ctattatatt agtattatat atcaacgaat attattatga acaactttca 1800
tgtttctatc caaaagaatt tgaattaata aaatccagaa tgatacatcc aaatatagta 1860
gatcgtatat taaaggggat agataactta atgaaaagta caagatatga taaaatgcgt 1920
acaatgtatt tggatttcga aagttccgat attttctcca gagaaaaagt tttcaccgcc 1980
ttatacaact tcgatagctt cattaagacc aatgaacaat taaagaagaa gaacttagaa 2040
gaaatatcag aaatacctgt acaattagaa acatctaatt atggatttgg atacagaaaa 2100
caagacgttc tttatgaaac tgataaacca caaactatgg atgaagcttc atatgaagaa 2160
actgtagatg aagatgctca ccatgttaat gaaaaacaac acagtgccca cttcttagat 2220
gctattgcgg aaaaagacat attagaagaa aaaaccaagg atcaagattt agaaatagaa 2280
ttatacaaat atatgggacc attaaaagaa caatctaaaa gtacaagtgc tgcattctact 2340
agtgatgaaa tatcaggttc tgaagggtcca tctactgaat ctacaagtac aggaaatcaa 2400
ggatgaagata aaacaacaga taatacatat aaagaaatgg aagaattaga agaagctgaa 2460
ggaacttcaa atcttaaaaa aggttttagaa ttttataaat cttctctaaa acttgatcaa 2520
ttagataaag aaaaaccta aaagaaaaaa tctaaaagaa aaaaaaagag agacagttct 2580
agtgacagaa tattattaga agaattctaa acctttactt ctgaaaatga attgatgaga 2640
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aacaatgaaa taaaaaatat tcgtatatat 2700
tataatttat aa 2712

<210> 45
<211> 2232
<212> DNA
<213> Plasmodium falciparum

<400> 45
atgatgaaca tgaaaattgt tttattcagt ttattgctct ttgtcataag atggaatatt 60
attagttgta ataaaaacga caagaaccaa ggtgttgata tgaatgtttt gaataattat 120
gaaaatttat ttaaatttgt taaatgtgaa tattgtaattg aacatactta tgttaaagg 180
aagaaagctc cttcagatcc tcaatgtgct gatataaaag aagaatgcaa agaattactt 240
aaggaaaaac aatacacaga ttcagttaca tatttaattg atggttttta atcagcaaat 300
aattcagcaa ataattggtaa aaaaaataac gctgaagaaa tgaaaaattt agtaaatttc 360
ttacaatctc ataagaaatt aattaaagca ttaaaaaaga atattgaaag tatacaaaat 420
aagaaacact taattttata aaacaaatca tataatccat tattactttc ttgtgttaaa 480
aaaatgaata tgttaaaaga aaatgttgac tatattcaaa aaaatcaaaa cttattttaa 540

gaattaatga atcaaaaagc tacctactct tttgttaata ccaaaaaaaaa aattatttct	600
ttaaaatcac aaggtcataa aaaagaaacc tcacaaaatc aaaatgaaaa taacgacaat	660
caaaaatatc aagaagttaa tgatgaagat gatgtaaatg atgaagaaga tacaaacgat	720
gacgaagata ctaacgatga agaagataca aacgatgacg aagatacaaa tgatgacgaa	780
gatactaacg atgaagaaga tactaacgac gaagaagatc atgaaaataa taatgctaca	840
gcatacgaat taggtatcgt ccaggttaac gatgtgttaa atgttaatat gaaaaatatg	900
ataacaggaa ataattttat ggatgttggt aaaaatacat tagctcaatc aggtggatta	960
ggaagtaatg atttaataaa tttcttaaat caaggtaaag aaataggaga aaatttatta	1020
aacataacaa agatgaactt gggagataag aataatcttg aaagttttcc tttagatgaa	1080
ttaaatatgt taaaagataa tttaataaac tatgaattca tattagataa tttgaaaaca	1140
agtgttttaa ataaattaaa agatttatta ttaagattat tatacaaagc atatgtatca	1200
tataagaaaa gaaaagctca agaaaaagga ttaccagaac ctactgttac taatgaagaa	1260
tatgttgaag aattaaagaa aggtattcta gatatgggta tcaaattatt atttagtaaa	1320
gttaaaagcc tattaaaaaa attaaaaaat aaaatattcc ctaagaaaaa agaagataat	1380
caagcagtag atacccaaag tatggaagaa cccaaagtta aagcacaacc agctcttaga	1440
ggtgttgaac caacggaaga ttctaataat atgaacagta ttaataatgt tatggatgaa	1500
attgatttct ttgaaaaaga attaatcgaa aataataata cacctaattgt tgtaccacca	1560
actcaatcaa aaaaaaaaa caaaaatgaa actgtatctg gtatggatga aaattttgat	1620
aatcatcctg aaaattattt taaagaagaa tattattatg atgaaaatga tgatatggaa	1680
gtaaaagtta aaaaaatagg tgtcacatta aaaaaatttg aaccacttaa aaatggaaat	1740
gttagtgaaa ccattaaatt gattcattta ggaaataaag ataaaaaaca cattgaagct	1800
ataaacaacg atattcaaat tattaacaa gaattacaag ctatttataa tgaacttatg	1860
aattatacaa atggaaacaa aaatattcaa caaatatttc aacaaaatat tctagaaaat	1920
gatgttctta atcaagaaac ggaggaagaa atggaaaaac aagttgaagc aatcaccaag	1980
caaatagaag ctgaagtgga tgccctcgca ccaaaaaata aggaagaaga agaaaaagaa	2040
aaggaaaaag aagaaaaaga aaaagaagaa aaagaaaaag aaaaagaaga aaaagaaaaa	2100
gaagaaaaag aaaaagaaga aaaagaaaaa gaagaaaaag aagaagaaaa aaaagaaaaa	2160
gaagaagaac aagaagaaga agaagaagaa gaaatagtac cagaaaattt gacaactgaa	2220
gaatcaaaat aa	2232

<210> 46
 <211> 428
 <212> PRT
 <213> Plasmodium falciparum

<400> 46

Met	Cys	Asn	Lys	Leu	Ser	Arg	Gly	Ser	Asn	Met	Asn	Lys	Ser	Glu	Leu
1				5					10					15	
Gly	Asp	Arg	Ser	Thr	Lys	Met	Lys	Gly	Lys	Ile	Cys	Ser	Ser	Tyr	Val
			20					25					30		
Lys	Tyr	Ile	Cys	Leu	Thr	Ile	Cys	Val	Ile	Gly	Met	Leu	Cys	Ile	Lys
		35					40					45			
Leu	Arg	Asp	Lys	Tyr	Glu	Gly	Tyr	Ala	Ala	Ser	Gly	Ile	Gln	Asn	Asn
	50					55					60				
Asn	Val	Tyr	Leu	Arg	Asn	Leu	Ser	Glu	Leu	Gln	Lys	Gly	Asn	Gln	Pro
65					70					75					80
Cys	Leu	Arg	His	Thr	Asn	Arg	Thr	Asp	Asn	Ser	Lys	Met	Asn	Lys	Val
				85					90					95	
Lys	Asn	Asn	Asn	Gln	Thr	Glu	Asn	Asn	Asp	Asn	Lys	Lys	Lys	Leu	Gly
			100					105					110		
Asn	Lys	Glu	Asp	Asn	Gln	Gly	Lys	Asn	Lys	Asn	Asn	Asn	Asn	Lys	Glu
		115					120					125			
Lys	Gln	Asn	Asp	Ile	Asn	Lys	Arg	Gly	Thr	Gln	Asn	Thr	Glu	Thr	Lys
		130				135					140				
Lys	Ser	Asn	Lys	Lys	Leu	Ser	Gln	Asp	Tyr	Asn	Asp	Val	Asn	Lys	Lys
145					150					155					160
Phe	Thr	Lys	Glu	Gln	Met	Lys	Asn	Leu	Val	Asn	Ser	Leu	Asp	Glu	Ile
				165					170					175	
Pro	Pro	Arg	Asn	Asp	Met	Glu	Lys	Ile	Trp	Asn	His	Ala	Val	Lys	Thr
			180					185						190	
Ala	Asn	Ser	Gly	Thr	Ser	Arg	Ile	Lys	Lys	Lys	Leu	Lys	Glu	Tyr	Glu
		195					200					205			
Gln	Lys	Tyr	Gly	Arg	Cys	Tyr	Glu	Glu	Arg	Pro	Asn	Arg	Phe	Gly	Ser
		210				215					220				
Tyr	Glu	Gln	Val	Leu	Ile	Ser	Gln	Pro	His	Glu	Phe	Asn	Glu	Arg	Leu
225					230					235					240
Lys	Val	His	Glu	Asn	Asp	Tyr	Thr	Val	Phe	Phe	Tyr	Glu	Leu	Leu	Asp
				245					250					255	
Lys	Asp	Pro	Thr	Leu	Asp	Glu	Ile	Lys	Asn	Tyr	Ile	Thr	Ser	Phe	Leu
			260					265					270		
Glu	Gly	Phe	Gln	Asn	Leu	Ile	Asp	Phe	Leu	Phe	Asn	Lys	Tyr	Lys	Ile
		275					280					285			

Gly Ser Leu Gly Phe Asp Ser Phe Lys Lys Leu Glu Leu Gly Thr Leu

130					135					140					
Asn	Gln	Phe	Asp	Lys	Asp	Lys	Met	Ile	Asn	Leu	Lys	Asp	Glu	Thr	Asn
145					150					155					160
Met	Asn	Glu	Phe	Glu	Gly	Phe	Leu	Gly	Arg	Asn	Ser	Met	Ala	Ser	Asn
				165					170					175	
Val	Val	Thr	Ser	Glu	Leu	Phe	Asp	Glu	Pro	Val	Asp	Asp	Ser	Ser	Ser
			180					185					190		
Thr	Thr	Thr	Ser	Thr	Gly	Thr	Lys	Leu	Gln	Asn	Val	Pro	Ser	Asn	Asp
			195				200					205			
Asn	Asn	Gly	Glu	Leu	Leu	Lys	Asp	Glu	Pro	Ile	Asp	Asp	Tyr	Ile	Asn
	210					215					220				
Asn	Asn	Ser	Lys	Val	Glu	Ser	Glu	Asp	Asn	Tyr	Tyr	Ala	Gln	Gln	Asn
225					230					235					240
Met	Gln	Ser	Gln	Ser	Lys	Asp	Asn	Tyr	Ala	Ser	Glu	Gln	Asn	Val	Ala
				245					250					255	
Asp	Gln	Ser	Thr	Asp	Asn	Tyr	Pro	Thr	Gln	His	Asp	Val	Pro	Val	Gln
			260					265					270		
Leu	Arg	Asp	Asn	Tyr	Ala	Ser	Glu	Gln	Glu	Tyr	Phe	Asp	Arg	Gly	Glu
		275					280					285			
Gln	Leu	Asn	Asp	Val	Ser	Ala	Asp	Asn	Asn	Thr	Ser	Asn	Lys	Leu	Lys
	290					295					300				
Asp	Glu	Pro	Val	Asp	Asn	Asn	Thr	Ser	Asn	Lys	Leu	Lys	Asp	Glu	Pro
305					310					315				320	
Val	Asp	Asn	Asn	Thr	Ser	Asn	Lys	Leu	Lys	Asp	Glu	Pro	Val	Asp	Asp
			325					330					335		
Asn	Thr	Ser	Asn	Lys	Leu	Lys	Asp	Glu	Pro	Val	Asp	Asn	Asn	Thr	Ile
			340				345					350			
Asn	Lys	Leu	Lys	Asp	Glu	Pro	Val	Asp	Asp	Asn	Thr	Ser	Asn	Ile	Leu
	355					360					365				
Lys	Asp	Glu	Pro	Val	Asp	Asp	His	Ala	Gly	Lys	His	Leu	Lys	Asp	Glu
	370					375					380				
Pro	Val	Asp	Asp	His	Ala	Gly	Lys	His	Met	Lys	Asp	Glu	Pro	Val	Asp
385				390					395					400	
Ile	Asp	Arg	Thr	Asn	Ile	Lys	Lys	Gly	Leu	Asn	Glu	Gln	His	Val	Asn
			405					410						415	
Pro	Trp	Thr	Thr	Thr	Leu	Ala	Asp	Leu	Lys	Asn	Ile	Asn	Asn	Ser	Met
			420					425					430		
Lys	Ile	Glu	Lys	Asn	Asn	Lys	Ser	Asn	Glu	Gln	Val	Lys	Asn	Thr	Ser
	435					440					445				
Val	Ser	Lys	Ser	Cys	Asp	Ile	Ile	Lys	Pro	Ser	Lys	Phe	Asn	Lys	Lys

450					455					460					
Asn	Leu	Phe	Glu	Gln	Arg	Leu	Gln	Ser	Val	Glu	Gly	Lys	Asn	Phe	Phe
465					470					475					480
Glu	Gly	Arg	Ser	Gln	Asn	Leu	Glu	Gly	Arg	Ser	Asn	Phe	Asp	Glu	Arg
				485					490					495	
Ser	Gln	Ile	Val	Glu	Gln	Arg	Arg	Asn	Phe	Asp	Asp	Arg	Asp	Gln	Asn
			500					505					510		
Ile	Met	Asp	Arg	Lys	Asn	Phe	Asp	Glu	Arg	Asn	Gln	Gln	Val	Asn	Asp
		515					520					525			
Arg	Arg	Asn	Phe	Asp	Glu	Arg	Asn	Gln	Gln	Val	Asn	Asp	Arg	Arg	Asn
		530					535					540			
Phe	Asp	Asp	Arg	Asp	Gln	Asn	Val	Met	Asp	Arg	Arg	Asn	Phe	Asp	Glu
545						550					555				560
Arg	Asn	Gln	Gln	Val	Asn	Asp	Arg	Arg	Asn	Phe	Asp	Glu	Arg	Asn	Gln
				565				570						575	
Gln	Val	Asn	Asp	Arg	Arg	Asn	Phe	Asp	Asp	Arg	Asp	Gln	Asn	Val	Met
			580					585					590		
Asp	Arg	Arg	Asn	Phe	Asp	Glu	Arg	Asn	Gln	Gln	Val	Asn	Asp	Arg	Arg
			595				600					605			
Asn	Phe	Asp	Glu	Arg	Asn	Gln	Gln	Val	Asn	Asp	Arg	Arg	Asn	Phe	Asp
	610					615					620				
Asp	Arg	Asp	Gln	Asn	Val	Met	Asp	Arg	Arg	Asn	Phe	Asp	Glu	Arg	Asn
625				630							635				640
Gln	Gln	Val	Asn	Asp	Arg	Arg	Asn	Phe	Asp	Glu	Arg	Asn	Gln	Gln	Val
				645					650					655	
Asn	Asp	Arg	Arg	Asn	Phe	Asp	Glu	Arg	Asn	Gln	His	Val	Asn	Asp	Arg
			660					665					670		
Arg	Asn	Phe	Asp	Glu	Arg	Asn	Gln	Asn	Val	Asn	Asp	Arg	Arg	Asn	Phe
		675					680					685			
Asp	Glu	Arg	Asn	Gln	Asn	Val	Asn	Asp	Arg	Arg	Asn	Phe	Asp	Glu	Arg
	690					695					700				
Asn	Gln	Gln	Val	Asn	Asp	Arg	Arg	Asn	Phe	Asp	Glu	Arg	Tyr	Gln	Asn
705				710					715						720
Val	Asn	Glu	Arg	Arg	Asn	Phe	Asp	Glu	Arg	Asn	Gln	Gln	Val	Asn	Asp
				725					730					735	
Arg	Arg	Asn	Phe	Asp	Glu	Arg	Asn	Gln	His	Val	Asn	Glu	Arg	Tyr	Gln
			740					745					750		
Asn	Val	Asn	Asp	Arg	Arg	Asn	Phe	Asp	Glu	Arg	Asn	Gln	Gln	Val	Asn
		755					760					765			
Asp	Arg	Arg	Asn	Phe	Asp	Glu	Arg	Asn	Gln	His	Val	Asn	Glu	Arg	Arg

770	775	780
Asn Phe Asp Glu Arg	Asn Gln His Val	Asn Glu Arg Tyr Gln Asn Val
785	790	795 800
Asn Asp Arg Arg	Asn Phe Asp Glu Arg	Asn Gln His Val Asn Glu Arg
	805	810 815
Arg Asn Phe Asp Gln Arg Ala Pro Asn Val Glu Glu Arg Arg Tyr Met		
	820	825 830
Asp Pro Arg Asn Pro Asn Ile Pro Tyr Val Arg Phe Pro His His Gln		
	835	840 845
Trp Gly Gln Gly Met Met Tyr Gly Arg Pro Tyr Tyr Pro Trp Val Pro		
	850	855 860
Phe Met Gly Asp Gly Arg Gly Tyr Asn Phe Tyr Asn Pro His Gln His		
	865	870 875 880
Met Val Tyr Gly Arg Pro Tyr Tyr Trp Val Pro Pro Pro Pro Ala Leu		
	885	890 895
Glu Tyr Thr Lys Gly Phe Asn Pro Met Glu Gln Arg Arg Glu Glu Asp		
	900	905 910
Arg Gly His Met Gly Gly Arg Gly Ser Arg Tyr Pro Glu Glu Glu Arg		
	915	920 925
Tyr Asn Tyr Asn Asn Lys Arg Ser Asn Ser Ile Pro Glu Gly Arg Asn		
	930	935 940
Tyr Glu Glu Asn Ala Tyr Glu Arg Gly Gly Gly Asn Asn Lys Trp Asp		
	945	950 955 960
Phe Arg Asn Met Tyr Asp Arg Leu Arg Asp Glu Asp Glu Asn Asp Tyr		
	965	970 975
Asp Gln Pro Pro Ser Thr Ser Ser Ser Asn Arg Gly Arg Gly Asn Glu		
	980	985 990
Arg Tyr Ser Gln Ser Arg Asp Arg Arg Glu Glu Arg Asn Asn Tyr Asn		
	995	1000 1005
Ser Asp Tyr Tyr Thr Arg Gly Asn Glu Arg Thr Tyr Asn Asn Ser		
	1010	1015 1020
Asn Val Thr Ser Ser Ser Asn Arg Glu Leu Ile Pro Tyr Lys Lys		
	1025	1030 1035
Glu Ile Leu Pro Phe Gly Val Ser Asn Ser Glu Leu Glu Asp Lys		
	1040	1045 1050
Leu Thr Glu Glu Glu Leu Asn Glu Arg Ile Arg Arg Leu Asp Tyr		
	1055	1060 1065
Thr Val Ser Val Lys Asp Met Phe Ile Leu Trp Asn His Ile Leu		
	1070	1075 1080
Ala His Glu Arg Lys Lys Tyr Thr Lys Met Gln Glu Tyr Leu Met		

2025-11-11 14:33:33

1085	1090	1095
Tyr Tyr Ser Gln Tyr Leu Glu Lys Thr Tyr Leu Val Pro Thr Ala		
1100	1105	1110
Phe Arg Lys Lys Tyr Trp Trp Arg Val His Tyr Met Leu Thr Glu		
1115	1120	1125
Glu Val Val Lys Arg Glu Arg Thr Asp Asn Leu Asp Phe His Gln		
1130	1135	1140
Phe Leu Arg Lys Gly Ser Cys Glu Lys Arg Glu Phe Leu Tyr Phe		
1145	1150	1155
Ile Asn Ser Lys Arg Lys Gly Trp Ala Asp Leu Thr Glu Thr Met		
1160	1165	1170
Lys Asn Ile Trp Met Glu Arg Leu Thr Tyr Lys Met Arg Lys Tyr		
1175	1180	1185
Ser Gly Ala		
1190		
<210> 48		
<211> 300		
<212> PRT		
<213> Plasmodium falciparum		
<400> 48		
Met Cys Ser Thr Asn Lys Asn Leu Ala Cys Cys Lys Gly Asp Asn Val		
1	5	10 15
Phe Asp Gly Gln Ile Asn Gly Asn Glu Ser Tyr Pro Gln Val Val Asn		
20	25	30
Lys Gln Leu Pro Pro Lys Val Leu Glu Pro Ile Ile Gln Asn Lys Ile		
35	40	45
Val Glu Ile Pro Lys Glu Val Tyr Leu Glu Lys Ile Val Glu Val Pro		
50	55	60
Gln Ile Lys Thr Val Glu Arg Ile Val Glu Gln Ile Arg Pro Val Ile		
65	70	75 80
Lys Tyr Lys Asn Val Tyr Lys Pro Lys Ile Val Tyr Val Glu Lys Val		
85	90	95
Lys Asn Val Asp Lys Ile Ile Tyr Gln Glu Lys Ile Val Glu Val Pro		
100	105	110
Gln Ile Lys Thr Val Glu Lys Ile Val Glu Val Pro Val Tyr Val Asn		
115	120	125
Arg Glu Arg Ile Ile Thr Val Pro Arg Tyr Met Val Val Glu Lys Val		
130	135	140
Ile Pro Val Leu Lys Thr Ser Lys Arg Glu Ser Ile Met Glu Val Pro		
145	150	155 160

Glu Val Asn Cys Pro His Ile Asp Ile Ser Lys Glu Val Glu Asp Lys
165 170 175

Glu Glu Ile Pro Ile Asn Glu Leu Lys Glu Asn Gln Thr Ile Ser Leu
180 185 190

Ala Asp Glu Lys Glu Ile Gln Ile Leu Asn Asp Leu Thr Ser Gln Lys
195 200 205

Val Asp Ser Asn Ala Thr Ile Asn Met Glu Gly Glu Gln Asp Thr Thr
210 215 220

Val Asp Thr Ile Thr Gln Glu Asn Phe Cys Gly Thr Val Ser Cys Asn
225 230 235 240

Phe Leu Pro Asn Tyr Pro Asn Phe Ser Lys Ile Gly Asn Pro Leu Cys
245 250 255

Lys Gly Gly Pro Glu Lys Glu Lys Arg Phe Ser Ser Ile Ser Ile Tyr
260 265 270

Lys Ser Lys Asp Ser Gly Phe Pro Ser Ile Arg Ile Ala Lys Thr Pro
275 280 285

Gln Met Phe Gln Arg Asn Leu Tyr Cys Ser Tyr Ala
290 295 300

<210> 49
<211> 400
<212> PRT
<213> Plasmodium falciparum

<400> 49

Met Lys Asn Glu Asn Met Gly Asn Ser Ile Phe Tyr Tyr Ser Cys Tyr
1 5 10 15

Val Ile Ile Val Leu Thr Ile Ile Leu Ser Lys Phe Val Val Ile Pro
20 25 30

Leu Met Ala Gln Met Phe Leu Tyr Thr Phe Ile Thr Ile Tyr Ile Gly
35 40 45

Ser His Asp Ser Leu Lys Gln Leu Glu Ile Asp Asp Lys Thr Lys Lys
50 55 60

Ser Asp Asn Ile Thr Ala Tyr Asp Ala Met Met Phe Pro Val Ile Gly
65 70 75 80

Ser Ala Ala Leu Leu Thr Leu Tyr Phe Ala Tyr Lys Phe Leu Asp Pro
85 90 95

Phe Tyr Val Asn Leu Leu Leu Thr Leu Tyr Leu Thr Leu Ala Gly Val
100 105 110

Phe Ser Leu Gln Gly Val Phe Thr Thr Ile Leu Glu Pro Val Phe Pro
115 120 125

Asn Phe Phe Lys Lys Asp Glu Tyr Val Lys Thr Phe Lys Leu Pro Asn
130 135 140

Phe Ile Tyr Lys Glu Pro Ile Val Phe Asn Thr Asn Lys Gly Glu Ile
 145 150 155 160
 Val Cys Leu Ile Leu Ser Phe Ala Ile Gly Leu Arg Trp Ile Phe Tyr
 165 170 175
 Lys Asp Phe Ile Thr His Asn Val Leu Ala Val Ser Phe Cys Phe Gln
 180 185 190
 Ala Ile Ser Leu Val Ile Leu Ser Asn Phe Leu Ile Gly Phe Leu Leu
 195 200 205
 Leu Ser Gly Leu Phe Val Tyr Asp Ile Phe Trp Val Phe Gly Asn Asp
 210 215 220
 Val Met Val Thr Val Ala Lys Ser Phe Glu Ala Pro Val Lys Leu Leu
 225 230 235 240
 Phe Pro Val Ser Ser Asp Pro Val His Tyr Ser Met Leu Gly Leu Gly
 245 250 255
 Asp Ile Ile Ile Pro Gly Ile Leu Met Ser Leu Cys Leu Arg Phe Asp
 260 265 270
 Tyr Tyr Leu Phe Lys Asn Asn Ile His Lys Gly Asn Leu Lys Lys Met
 275 280 285
 Phe Asn Asp Ile Ser Ile His Glu Ser Phe Lys Lys Tyr Tyr Phe Tyr
 290 295 300
 Thr Ile Ile Ile Phe Tyr Glu Leu Gly Leu Val Val Thr Tyr Cys Met
 305 310 315 320
 Leu Phe Tyr Phe Glu His Pro Gln Pro Ala Leu Leu Tyr Leu Val Pro
 325 330 335
 Ala Cys Ile Leu Ala Ile Leu Ala Cys Ser Ile Cys Lys Arg Glu Phe
 340 345 350
 Lys Leu Met Ile Lys Tyr Gln Glu Ile Thr Asp Lys Ser Asn Thr Val
 355 360 365
 Asp Asp Ala Ser Lys Asn Lys Lys Lys Asp Lys Glu Glu Ile Pro Lys
 370 375 380
 Ile Gln Glu Thr Pro Val Ser Asn Ala Lys Lys Arg Ile Thr Asn Lys
 385 390 395 400

<210> 50

<211> 1331

<212> PRT

<213> Plasmodium falciparum

<400> 50

Met Val Leu Val Val Glu Tyr His Asn Ile Asn Thr Pro Val Gly Lys
 1 5 10 15

Tyr Ser Glu Leu Glu Asn Leu Lys Glu Glu Lys Glu Lys Arg Leu Tyr

20					25					30					
Asn	Asn	Leu	Glu	Tyr	Val	Asn	Leu	Leu	Asp	Ile	Arg	Thr	Leu	Glu	Asn
	35						40					45			
Lys	Ser	Ile	Tyr	Val	Ser	Ser	Asp	Leu	Leu	Asn	Phe	Leu	Lys	Cys	Tyr
	50					55					60				
Ser	Asn	Leu	Asn	Ile	Asn	Leu	Asn	Lys	Val	Pro	Tyr	Asp	Leu	Val	Tyr
65					70					75					80
Ser	Phe	Leu	Leu	Asp	Gly	Glu	Leu	Tyr	Leu	Gly	Tyr	Asp	Ile	Ser	Val
				85					90					95	
Phe	Ile	Leu	Leu	Val	Lys	Ala	Glu	His	Phe	Glu	Tyr	Cys	Arg	Arg	Ile
				100				105					110		
Asp	Asn	Glu	Asn	Ser	Asp	Lys	Lys	Glu	Ser	Phe	Arg	Thr	Lys	Asn	Lys
		115					120						125		
Ser	Thr	Ile	Lys	Arg	Ser	Ser	Gln	Ile	Asp	Asp	Glu	Asp	Asn	Leu	Gln
	130						135					140			
Gly	Leu	Leu	Ile	Lys	Glu	Lys	Glu	Asp	Tyr	Leu	Ser	Phe	Leu	Asn	Glu
145					150					155					160
Asn	Asn	Glu	Ala	Leu	Lys	Gln	Tyr	Met	Glu	Ser	Glu	Lys	Arg	Gly	Asn
				165					170					175	
Pro	Leu	Trp	His	Leu	Asp	Glu	Ser	Lys	Tyr	Met	Asp	Lys	Asp	Trp	Tyr
			180					185					190		
Asp	Glu	Glu	Asp	Ser	Ser	Phe	Ile	Phe	Lys	Pro	Thr	Phe	Asn	Tyr	Leu
		195					200						205		
Gly	Lys	Asn	Asn	Asn	Asn	Asn	Asn	Asn	His	Asn	Asn	Asn	Asn	Ala	Phe
	210						215				220				
Ser	Asn	Phe	Val	Met	Gly	Asn	Leu	Ser	Ser	Asp	Asn	Ile	Ser	Gly	Cys
225					230					235					240
Phe	Phe	Val	Glu	Lys	Leu	Asn	Ala	Tyr	Leu	Phe	Ala	Met	Leu	Asp	Lys
				245					250					255	
Cys	Ser	Asn	Lys	Thr	Val	Ile	Ser	Val	Phe	Pro	Tyr	Glu	Lys	Phe	Gly
			260					265					270		
Arg	His	Glu	Ser	Arg	Asn	Leu	Ala	Ile	Gln	Phe	Ser	Gln	Tyr	Glu	Asp
		275					280					285			
Tyr	Met	His	Arg	Ile	Ile	Glu	Asp	Arg	Leu	Tyr	Ala	Asn	Ile	Gln	Asn
	290					295					300				
Asn	Leu	Pro	Ser	Val	His	Asn	Met	Lys	Asn	Met	Ser	Asn	Met	Asn	Asn
305					310					315					320
Ile	Asn	Asn	Asn	Asn	Lys	Asp	Ile	Ile	Ile	Asn	Arg	Ser	Gly	Ile	Ser
				325					330					335	
Asn	Gly	Asn	Ser	Gln	Ser	Val	Pro	Cys	Phe	Glu	Asn	Ile	Leu	Asp	Tyr

340					345					350					
Asp	Lys	Leu	Lys	Phe	Val	Glu	Tyr	Ile	Asn	Ser	Phe	Ser	Asp	Val	Lys
		355					360					365			
Lys	Ser	Ser	Ser	Phe	Asp	Ile	Ile	Gly	Ser	Ser	Lys	Asn	Ile	Tyr	Glu
	370					375					380				
Gln	Gly	Glu	Asn	Leu	Lys	Asn	Tyr	Cys	Ile	Tyr	His	Asn	Asn	Asn	Phe
385					390					395					400
Glu	Ser	Gly	Phe	Glu	Asn	Tyr	Ile	Leu	Glu	Asn	Lys	Gln	Pro	Leu	Glu
				405					410					415	
Leu	Ile	Glu	Asn	His	Phe	Asp	Ile	Met	Glu	Asn	Ile	Lys	Gly	Met	Tyr
			420					425					430		
Asp	Asn	Thr	Asn	Gln	Glu	Glu	Met	Asn	Phe	Asn	Asn	Val	Ser	Gly	Leu
		435					440					445			
Leu	Arg	Glu	Asp	Asn	Ser	Asn	Met	Asn	Glu	Ile	Tyr	Leu	Thr	Arg	Asp
	450						455				460				
Asn	His	Asn	Asn	Asn	Tyr	His	Glu	Asn	Glu	Glu	Asn	Ile	Tyr	Ser	Ile
465					470					475					480
Asn	Ile	Lys	Tyr	Ile	Asn	Asn	His	Phe	Asn	Asn	Lys	Asp	Asp	Met	Ile
				485					490					495	
Met	Lys	Cys	Lys	Asn	Met	Lys	Gly	Ser	Ile	Ser	Met	Asp	Asn	Asn	Ser
			500					505					510		
Ser	Asn	Ser	Asn	Ser	Asn	Asn	Thr	His	Phe	Glu	Lys	Thr	Leu	Glu	Ser
		515					520					525			
Ile	Asn	Pro	Asp	Asp	His	Asn	Ile	Phe	Asn	Ser	Glu	Met	Asp	Ser	Met
	530					535					540				
Lys	Asn	Glu	Asn	Asn	Asp	Glu	Glu	Glu	Gln	Thr	Ala	Thr	Ser	Ile	Tyr
545					550					555					560
Asn	Ile	Leu	Gly	Lys	Ile	Gly	Lys	Asp	Thr	Tyr	Ile	Lys	Arg	Cys	Ser
				565					570					575	
Ser	Asn	Tyr	Asn	Tyr	Asp	Asn	Asn	Asn	Gly	Tyr	Ser	Asn	Glu	Ser	Ser
			580					585					590		
Asp	Asn	Tyr	Asn	Asn	Gly	Tyr	Asn	Asp	Ser	Thr	Asp	Asn	Asn	Asn	Gly
	595						600					605			
Tyr	Asn	Ser	Asn	Ser	Ser	Tyr	Asn	Ser	Asn	Asn	Asn	Glu	Asp	Asp	Asn
	610					615					620				
Asn	Asn	Asn	Asn	Asn	Asn	Asp	Glu	Asn	Cys	Asp	Asn	Asn	Asn	Asn	His
625					630					635					640
Asn	Asn	Asn	Asn	Tyr	Asn	Asn	Asn	Asn	Asn	Tyr	Gly	Asn	Asn	Asn	Asn
				645					650					655	
Asn	Asn	Asn	Asn	Asn	Lys	Asp	Asn	Asn	Asn	Asn	Asp	Gly	Asn	Gly	Ser

660										665					670							
Ser	Asn	Asn	Asn	Asn	Asn	Asn	Asp	Asp	Asp	Asp	Glu	Glu	Glu	Glu	Asp	Asp						
			675											685								
Glu	Asp	Asp	Asn	Asn	Asn	Asn	Asn	Asp	Asp	Asp	Asp	Asn	Met	Ser	Asp	Asn						
	690							695					700									
Glu	Glu	Met	Glu	Asp	Asn	Asp	Glu	Asp	Asn	Asp	Glu	Tyr	Asn	Asn	Ser							
	705					710						715				720						
Asn	Asp	Ser	Tyr	Lys	Tyr	Glu	Glu	Lys	Asp	Ser	Asn	His	Glu	Lys	Asp							
				725					730						735							
Leu	Lys	Lys	Asp	Ile	Ile	Glu	Gly	Asp	Met	Ile	Asn	Ser	Val	Lys	Tyr							
			740					745						750								
Asp	Lys	Asn	Ile	Gly	His	His	Thr	Thr	Asn	Lys	Ser	Glu	Ile	Ser	Thr							
		755						760					765									
Asn	Tyr	Phe	Glu	Asn	Ser	Cys	Asn	Met	Ser	Val	Asn	Asn	Ser	Asn	Asn							
		770				775						780										
Glu	Ala	Tyr	Asp	Asp	Asn	Cys	Asn	Asn	Gly	Phe	Met	Asn	His	Asp	Glu							
	785					790				795					800							
Gly	Leu	Thr	Leu	Asn	Asn	Gly	Asn	Val	Ser	Asn	Asn	Lys	Cys	Asp	Ile							
				805					810					815								
Ile	Ile	Pro	Glu	Asp	Gly	Ser	Val	Met	Tyr	Glu	Asn	Met	Ile	Asn	Arg							
			820					825					830									
Gly	Asn	Gly	Leu	Thr	Ser	Asn	Ile	Asn	Asn	Asn	Asn	Asn	Val	Ser	Asn							
		835					840						845									
Asn	Asn	Ser	Ile	Ser	Cys	Asn	Ala	Asp	Asp	Asn	Val	Tyr	Asn	Asn	Ile							
		850				855					860											
Asn	Asn	Tyr	Ile	Asn	Thr	Tyr	Met	Glu	Thr	Thr	Asn	Asn	Lys	Asn	His							
					870					875					880							
Ile	Glu	Asn	Arg	Cys	Asn	Gln	Asp	Ser	Tyr	Ser	Thr	Asn	Glu	Glu	Pro							
				885					890					895								
Leu	Ser	Asn	His	Ser	Ile	Asn	Asp	Pro	Gly	Lys	Ile	Lys	Asp	Gly	Ile							
			900					905					910									
Met	Tyr	Asp	Gly	Asn	Asp	Leu	Asp	Met	Asn	Gly	Thr	Gln	Glu	His	Ser							
		915					920					925										
Lys	Glu	Glu	Gly	Met	Asp	Val	Phe	Glu	Pro	Asn	Phe	Phe	Glu	Leu	Lys							
		930				935					940											
Arg	Asn	Ser	Ser	Asp	Gly	Gln	Asn	Lys	His	Leu	Glu	Pro	Gly	Val	Gln							
					950					955					960							
Lys	Lys	Ile	Ser	Lys	Lys	Arg	Ser	Lys	Val	Lys	His	Glu	Arg	Asn	Ser							
				965					970					975								
Lys	Ile	Leu	Asp	Asp	Glu	Lys	Lys	Glu	Val	Leu	Asn	Lys	Val	Ser	Gln							

20100304 10:00:00

	980					985					990				
Ile	Thr	Arg	Val	Gly	Gly	Val	Cys	Phe	Asp	Lys	Asn	Arg	Gln	Arg	Trp
		995					1000					1005			
Ile	Ala	His	Trp	Lys	Ile	Asp	Gly	Lys	Tyr	His	Lys	His	Tyr	Phe	
	1010					1015					1020				
Pro	Ile	Ser	Gln	Tyr	Gly	Phe	Glu	Asn	Ala	Arg	Glu	Arg	Ala	Val	
	1025					1030					1035				
Ser	Cys	Arg	Lys	Gln	Ala	Glu	Lys	Leu	Phe	Asn	Leu	Pro	Glu	Ile	
	1040					1045					1050				
Gln	Pro	Arg	Asn	Arg	Trp	Asn	Gln	Ile	Lys	Val	Asn	Gly	Thr	Ser	
	1055					1060					1065				
His	Ile	Lys	Lys	Ala	Ala	Lys	Leu	Pro	Arg	Cys	Glu	Gly	Ile	Gly	
	1070					1075					1080				
Tyr	Asp	Glu	Leu	Ser	Gln	Ser	Trp	Val	Ser	Thr	Phe	Val	Val	His	
	1085					1090					1095				
Lys	Lys	Phe	Ser	Ile	Glu	Glu	Leu	Gly	Phe	Tyr	Glu	Ala	Arg	Glu	
	1100					1105					1110				
Lys	Ala	Ile	Tyr	Cys	Arg	Lys	Thr	Phe	Glu	Lys	Val	Asn	Val	His	
	1115					1120					1125				
Asp	Asp	Tyr	Glu	Cys	Leu	Leu	Asn	Asp	Arg	Leu	Gly	Leu	Arg	Asn	
	1130					1135					1140				
Glu	Glu	Lys	Asp	Glu	Leu	Ser	Asp	Leu	Ile	Asn	Ile	Asp	Lys	Asn	
	1145					1150					1155				
Ala	Leu	Asp	Asn	Leu	Glu	Leu	Glu	Thr	Ser	Val	His	Asn	Asn	Asn	
	1160					1165					1170				
Lys	Val	Lys	His	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	
	1175					1180					1185				
Asn	Asn	Asn	Asn	Asn	Asn	Asn	Asn	Ser	Glu	Lys	Met	Arg	Ile	Lys	
	1190					1195					1200				
Asn	Asn	Asp	Phe	Ser	Val	Asp	Asn	Asn	Asn	Glu	Asn	Val	Gly	Thr	
	1205					1210					1215				
Gly	Glu	Ile	Lys	Ile	Ser	Asn	Asp	Lys	Tyr	Leu	Lys	Ile	Thr	Gln	
	1220					1225					1230				
Glu	Ala	Ile	Glu	Met	Ile	Leu	Ser	Asn	Ile	Lys	His	Lys	Ser	Leu	
	1235					1240					1245				
Pro	Glu	Ile	Lys	Met	Lys	Leu	Ile	Asp	Lys	Gln	Lys	Phe	Glu	Asn	
	1250					1255					1260				
Tyr	Asn	Thr	Leu	Leu	Asp	Lys	His	Phe	Lys	Phe	Ile	Thr	Ser	Val	
	1265					1270					1275				
Lys	Asn	Ile	Ser	Gln	Leu	Arg	Arg	Tyr	Ile	Ser	Leu	Phe	His	Lys	

1280				1285				1290								
Phe	Ile	Ile	Tyr	His	Thr	Leu	Pro	His	Asn	Ile	Ser	Leu	Arg	Lys		
1295				1300				1305								
Gln	Leu	Phe	Ile	Ile	Glu	Ala	Leu	Glu	Trp	Ser	Ser	Phe	Phe	Ser		
1310				1315				1320								
Gly	Ala	Ala	Ser	Glu	Lys	Val	Glu									
1325				1330												
<210> 51																
<211> 291																
<212> PRT																
<213> Plasmodium falciparum																
<400> 51																
Met	Glu	Val	Thr	Ser	Thr	Leu	Leu	Glu	Lys	Gly	Lys	Asn	Phe	Ala	Gln	
1				5				10						15		
Asp	Pro	Ser	Glu	Val	Phe	Pro	Glu	Ser	Lys	Lys	Phe	Phe	Phe	Ser	Ser	
			20				25						30			
Ile	Val	Cys	Leu	Lys	Thr	Asn	Phe	Asp	Lys	Arg	Thr	Gly	Ala	Leu	Gly	
		35				40					45					
Tyr	Leu	Asn	Leu	Ser	Tyr	Gly	Met	Gly	Ile	Ile	Phe	Gly	Ser	Phe	Leu	
		50				55					60					
Ala	Gly	Val	Met	Val	Asn	Phe	Val	Gly	Ser	Arg	Gly	Asn	Leu	Leu	Ile	
65				70						75					80	
Ala	Leu	Leu	Ser	Gln	Leu	Ile	Ala	Leu	Cys	Ile	Ser	Thr	Thr	Leu	Glu	
			85						90					95		
Glu	Asp	Pro	Lys	Leu	Leu	Lys	Ser	Ser	Asn	Val	Asp	Lys	Met	Lys	Met	
			100						105					110		
Ser	Glu	Ile	Leu	Leu	Ser	Ile	Lys	Asn	Glu	Tyr	Ile	Arg	Val	Leu	Asn	
		115					120					125				
Leu	Phe	Lys	Lys	Thr	Tyr	Gly	Ile	Cys	Leu	Leu	Ile	Leu	Phe	Gly	Leu	
		130					135					140				
Leu	Pro	Ile	Leu	Met	Thr	Lys	Phe	Ala	Phe	Ala	Pro	Val	Val	Val	Asp	
145					150					155					160	
Met	Phe	Lys	Leu	Thr	Pro	Ser	His	Thr	Ser	Tyr	Leu	Met	Thr	Tyr	Ala	
			165						170					175		
Gly	Ile	Ile	Thr	Ile	Ile	Ala	Glu	Gly	Ile	Leu	Ala	Pro	Tyr	Leu	Ser	
			180						185					190		
Ser	Leu	Leu	Gly	Asp	Met	Ile	Cys	Cys	Lys	Tyr	Ser	Ile	Pro	Leu	Thr	
		195					200					205				
Leu	Thr	Gly	Phe	Leu	Leu	Leu	Ser	Leu	Cys	Gly	Ala	Asn	Glu	Ser	Leu	
210					215					220						

Val Leu Ile Phe Met Ser Ile Pro Leu Cys Gly Gly Ala Leu Leu Tyr
225 230 235 240

Ile Cys Gly Thr Ser Gln Met Thr Lys Arg Val Glu Glu Ser Glu Leu
245 250 255

Gly Ser Ile Ile Gly Leu Asn Thr Ser Leu Phe Tyr Ala Val Thr Ile
260 265 270

Ile Ala Pro Tyr Ile Ala Phe Lys Ser Tyr Ile Ala Leu Gly Leu Gly
275 280 285

Leu Tyr Trp
290

<210> 52

<211> 903

<212> PRT

<213> Plasmodium falciparum

<400> 52

Met Arg Ile Trp Gly Lys Asp Val Phe Ala Gly Phe Val Thr Lys Lys
1 5 10 15

Leu Lys Thr Leu Leu Asp Cys Asn Phe Ala Leu Tyr Tyr Asn Phe Lys
20 25 30

Gly Asn Gly Pro Asp Ala Gly Ser Phe Leu Asp Phe Val Asp Glu Pro
35 40 45

Glu Gln Phe Tyr Trp Phe Val Glu His Phe Leu Ser Val Lys Phe Arg
50 55 60

Val Pro Lys His Leu Lys Asp Lys Asn Ile His Asn Phe Thr Pro Cys
65 70 75 80

Leu Asn Arg Ser Trp Val Ser Glu Phe Leu Lys Glu Tyr Glu Glu Pro
85 90 95

Phe Val Asn Pro Val Met Lys Phe Leu Asp Lys Glu Gln Arg Leu Phe
100 105 110

Phe Thr Tyr Asn Phe Gly Asp Val Glu Pro Gln Gly Lys Tyr Thr Tyr
115 120 125

Phe Pro Val Lys Glu Phe His Lys Tyr Cys Ile Leu Pro Pro Leu Ile
130 135 140

Lys Thr Asn Ile Lys Asp Gly Glu Ser Gly Glu Phe Leu Lys Tyr Gln
145 150 155 160

Leu Asn Lys Glu Glu Tyr Lys Val Phe Leu Ser Ser Val Gly Ser Gln
165 170 175

Met Thr Ala Ile Lys Asn Leu Tyr Ser Thr Val Glu Asp Glu Gln Arg
180 185 190

Lys Gln Leu Leu Lys Val Ile Ile Glu Asn Glu Ser Thr Asn Asp Ile
195 200 205

Ser Val Gln Cys Pro Thr Tyr Asn Ile Lys Leu His Tyr Thr Lys Glu
210 215 220

Cys Ala Asn Ser Asn Asn Ile Leu Lys Cys Ile Asp Glu Phe Leu Arg
225 230 235 240

Lys Thr Cys Glu Lys Lys Thr Glu Ser Lys His Pro Ser Ala Asp Leu
245 250 255

Cys Glu His Leu Gln Phe Leu Phe Glu Ser Leu Lys Asn Pro Tyr Leu
260 265 270

Asp Asn Phe Lys Lys Phe Met Thr Asn Ser Asp Phe Thr Leu Ile Lys
275 280 285

Pro Gln Ser Val Trp Asn Val Pro Ile Phe Asp Ile Tyr Lys Pro Lys
290 295 300

Asn Tyr Leu Asp Ser Val Gln Asn Leu Asp Thr Glu Cys Phe Lys Lys
305 310 315 320

Leu Asn Ser Lys Asn Leu Ile Phe Leu Ser Phe His Asp Asp Ile Pro
325 330 335

Asn Asn Pro Tyr Tyr Asn Val Glu Leu Gln Glu Ile Val Lys Leu Ser
340 345 350

Thr Tyr Thr Tyr Ser Ile Phe Asp Lys Leu Tyr Asn Phe Phe Phe Val
355 360 365

Phe Lys Lys Ser Gly Ala Pro Ile Ser Pro Val Ser Val Lys Glu Leu
370 375 380

Ser His Asn Ile Thr Asp Phe Ser Phe Lys Glu Asp Asn Ser Glu Ile
385 390 395 400

Gln Cys Gln Asn Val Arg Lys Ser Leu Asp Leu Glu Val Asp Val Glu
405 410 415

Thr Met Lys Gly Ile Ala Ala Glu Lys Leu Cys Lys Ile Ile Glu Lys
420 425 430

Phe Ile Leu Thr Lys Asp Asp Ala Ser Lys Pro Glu Lys Ser Asp Ile
435 440 445

His Arg Gly Phe Arg Ile Leu Cys Ile Leu Ile Ser Thr His Val Glu
450 455 460

Ala Tyr Asn Ile Val Arg Gln Leu Leu Asn Met Glu Ser Met Ile Ser
465 470 475 480

Leu Thr Arg Tyr Thr Ser Leu Tyr Ile His Lys Phe Phe Lys Ser Val
485 490 495

Thr Leu Leu Lys Gly Asn Phe Leu Tyr Lys Asn Asn Lys Ala Ile Arg
500 505 510

Tyr Ser Arg Ala Cys Ser Lys Ala Ser Leu His Val Pro Ser Val Leu
515 520 525

Tyr	Arg	Arg	Asn	Ile	Tyr	Ile	Pro	Glu	Thr	Phe	Leu	Ser	Leu	Tyr	Leu
530						535					540				
Gly	Leu	Ser	Asn	Leu	Val	Ser	Ser	Asn	Pro	Ser	Ser	Pro	Phe	Phe	Glu
545					550					555					560
Tyr	Ala	Ile	Ile	Glu	Phe	Leu	Val	Thr	Tyr	Tyr	Asn	Lys	Gly	Ser	Glu
				565					570					575	
Lys	Phe	Val	Leu	Tyr	Phe	Ile	Ser	Ile	Ile	Ser	Val	Leu	Tyr	Ile	Asn
			580					585					590		
Glu	Tyr	Tyr	Tyr	Glu	Gln	Leu	Ser	Cys	Phe	Tyr	Pro	Lys	Glu	Phe	Glu
		595					600					605			
Leu	Ile	Lys	Ser	Arg	Met	Ile	His	Pro	Asn	Ile	Val	Asp	Arg	Ile	Leu
610						615					620				
Lys	Gly	Ile	Asp	Asn	Leu	Met	Lys	Ser	Thr	Arg	Tyr	Asp	Lys	Met	Arg
625					630					635					640
Thr	Met	Tyr	Leu	Asp	Phe	Glu	Ser	Ser	Asp	Ile	Phe	Ser	Arg	Glu	Lys
				645					650					655	
Val	Phe	Thr	Ala	Leu	Tyr	Asn	Phe	Asp	Ser	Phe	Ile	Lys	Thr	Asn	Glu
			660					665					670		
Gln	Leu	Lys	Lys	Lys	Asn	Leu	Glu	Glu	Ile	Ser	Glu	Ile	Pro	Val	Gln
		675					680					685			
Leu	Glu	Thr	Ser	Asn	Asp	Gly	Ile	Gly	Tyr	Arg	Lys	Gln	Asp	Val	Leu
690						695					700				
Tyr	Glu	Thr	Asp	Lys	Pro	Gln	Thr	Met	Asp	Glu	Ala	Ser	Tyr	Glu	Glu
705					710					715					720
Thr	Val	Asp	Glu	Asp	Ala	His	His	Val	Asn	Glu	Lys	Gln	His	Ser	Ala
				725					730					735	
His	Phe	Leu	Asp	Ala	Ile	Ala	Glu	Lys	Asp	Ile	Leu	Glu	Glu	Lys	Thr
			740					745					750		
Lys	Asp	Gln	Asp	Leu	Glu	Ile	Glu	Leu	Tyr	Lys	Tyr	Met	Gly	Pro	Leu
		755					760					765			
Lys	Glu	Gln	Ser	Lys	Ser	Thr	Ser	Ala	Ala	Ser	Thr	Ser	Asp	Glu	Ile
		770				775					780				
Ser	Gly	Ser	Glu	Gly	Pro	Ser	Thr	Glu	Ser	Thr	Ser	Thr	Gly	Asn	Gln
785					790					795					800
Gly	Glu	Asp	Lys	Thr	Thr	Asp	Asn	Thr	Tyr	Lys	Glu	Met	Glu	Glu	Leu
				805					810					815	
Glu	Glu	Ala	Glu	Gly	Thr	Ser	Asn	Leu	Lys	Lys	Gly	Leu	Glu	Phe	Tyr
			820					825					830		
Lys	Ser	Ser	Leu	Lys	Leu	Asp	Gln	Leu	Asp	Lys	Glu	Lys	Pro	Lys	Lys
			835				840					845			

Lys Lys Ser Lys Arg Lys Lys Lys Arg Asp Ser Ser Ser Asp Arg Ile
850 855 860

Leu Leu Glu Glu Ser Lys Thr Phe Thr Ser Glu Asn Glu Leu Met Arg
865 870 875 880

Lys Lys Lys Lys Lys Lys Lys Lys Lys Asn Asn Asn Glu Ile Lys Asn
885 890 895

Ile Arg Ile Tyr Tyr Asn Leu
900

<210> 53
<211> 743
<212> PRT
<213> Plasmodium falciparum

<400> 53

Met Met Asn Met Lys Ile Val Leu Phe Ser Leu Leu Leu Phe Val Ile
1 5 10 15

Arg Trp Asn Ile Ile Ser Cys Asn Lys Asn Asp Lys Asn Gln Gly Val
20 25 30

Asp Met Asn Val Leu Asn Asn Tyr Glu Asn Leu Phe Lys Phe Val Lys
35 40 45

Cys Glu Tyr Cys Asn Glu His Thr Tyr Val Lys Gly Lys Lys Ala Pro
50 55 60

Ser Asp Pro Gln Cys Ala Asp Ile Lys Glu Glu Cys Lys Glu Leu Leu
65 70 75 80

Lys Glu Lys Gln Tyr Thr Asp Ser Val Thr Tyr Leu Met Asp Gly Phe
85 90 95

Lys Ser Ala Asn Asn Ser Ala Asn Asn Gly Lys Lys Asn Asn Ala Glu
100 105 110

Glu Met Lys Asn Leu Val Asn Phe Leu Gln Ser His Lys Lys Leu Ile
115 120 125

Lys Ala Leu Lys Lys Asn Ile Glu Ser Ile Gln Asn Lys Lys His Leu
130 135 140

Ile Tyr Lys Asn Lys Ser Tyr Asn Pro Leu Leu Leu Ser Cys Val Lys
145 150 155 160

Lys Met Asn Met Leu Lys Glu Asn Val Asp Tyr Ile Gln Lys Asn Gln
165 170 175

Asn Leu Phe Lys Glu Leu Met Asn Gln Lys Ala Thr Tyr Ser Phe Val
180 185 190

Asn Thr Lys Lys Lys Ile Ile Ser Leu Lys Ser Gln Gly His Lys Lys
195 200 205

Glu Thr Ser Gln Asn Gln Asn Glu Asn Asn Asp Asn Gln Lys Tyr Gln

210	215	220
Glu Val Asn Asp Glu Asp Asp Val Asn Asp Glu Glu Asp Thr Asn Asp		
225	230	235 240
Asp Glu Asp Thr Asn Asp Glu Glu Asp Thr Asn Asp Asp Glu Asp Thr		
	245	250 255
Asn Asp Asp Glu Asp Thr Asn Asp Glu Glu Asp Thr Asn Asp Glu Glu		
	260	265 270
Asp His Glu Asn Asn Asn Ala Thr Ala Tyr Glu Leu Gly Ile Val Pro		
	275	280 285
Val Asn Asp Val Leu Asn Val Asn Met Lys Asn Met Ile Thr Gly Asn		
	290	295 300
Asn Phe Met Asp Val Val Lys Asn Thr Leu Ala Gln Ser Gly Gly Leu		
	305	310 315 320
Gly Ser Asn Asp Leu Ile Asn Phe Leu Asn Gln Gly Lys Glu Ile Gly		
	325	330 335
Glu Asn Leu Leu Asn Ile Thr Lys Met Asn Leu Gly Asp Lys Asn Asn		
	340	345 350
Leu Glu Ser Phe Pro Leu Asp Glu Leu Asn Met Leu Lys Asp Asn Leu		
	355	360 365
Ile Asn Tyr Glu Phe Ile Leu Asp Asn Leu Lys Thr Ser Val Leu Asn		
	370	375 380
Lys Leu Lys Asp Leu Leu Leu Arg Leu Leu Tyr Lys Ala Tyr Val Ser		
	385	390 395 400
Tyr Lys Lys Arg Lys Ala Gln Glu Lys Gly Leu Pro Glu Pro Thr Val		
	405	410 415
Thr Asn Glu Glu Tyr Val Glu Glu Leu Lys Lys Gly Ile Leu Asp Met		
	420	425 430
Gly Ile Lys Leu Leu Phe Ser Lys Val Lys Ser Leu Leu Lys Lys Leu		
	435	440 445
Lys Asn Lys Ile Phe Pro Lys Lys Lys Glu Asp Asn Gln Ala Val Asp		
	450	455 460
Thr Lys Ser Met Glu Glu Pro Lys Val Lys Ala Gln Pro Ala Leu Arg		
	465	470 475 480
Gly Val Glu Pro Thr Glu Asp Ser Asn Ile Met Asn Ser Ile Asn Asn		
	485	490 495
Val Met Asp Glu Ile Asp Phe Phe Glu Lys Glu Leu Ile Glu Asn Asn		
	500	505 510
Asn Thr Pro Asn Val Val Pro Pro Thr Gln Ser Lys Lys Lys Asn Lys		
	515	520 525
Asn Glu Thr Val Ser Gly Met Asp Glu Asn Phe Asp Asn His Pro Glu		

530	535	540
Asn Tyr Phe Lys Glu Glu Tyr Tyr Tyr Asp Glu Asn Asp Asp Met Glu 545 550 555 560		
Val Lys Val Lys Lys Ile Gly Val Thr Leu Lys Lys Phe Glu Pro Leu 565 570 575		
Lys Asn Gly Asn Val Ser Glu Thr Ile Lys Leu Ile His Leu Gly Asn 580 585 590		
Lys Asp Lys Lys His Ile Glu Ala Ile Asn Asn Asp Ile Gln Ile Ile 595 600 605		
Lys Gln Glu Leu Gln Ala Ile Tyr Asn Glu Leu Met Asn Tyr Thr Asn 610 615 620		
Gly Asn Lys Asn Ile Gln Gln Ile Phe Gln Gln Asn Ile Leu Glu Asn 625 630 635 640		
Asp Val Leu Asn Gln Glu Thr Glu Glu Glu Met Glu Lys Gln Val Glu 645 650 655		
Ala Ile Thr Lys Gln Ile Glu Ala Glu Val Asp Ala Leu Ala Pro Lys 660 665 670		
Asn Lys Glu Glu Glu Glu Lys Glu Lys Glu Lys Glu Glu Lys Glu Lys 675 680 685		
Glu Glu Lys Glu Lys Glu Lys Glu Glu Lys Glu Lys Glu Glu Lys Glu 690 695 700		
Lys Glu Glu Lys Glu Lys Glu Glu Lys Glu Glu Glu Lys Lys Glu Lys 705 710 715 720		
Glu Glu Glu Gln Glu Glu Glu Glu Glu Glu Glu Ile Val Pro Glu Asn 725 730 735		
Leu Thr Thr Glu Glu Ser Lys 740		

<210> 54

<211> 1137

<212> DNA

<213> Plasmodium falciparum

<400> 54

ggagaagcag taactccttc cgtaattgat aacatacttt ctaaaattga aaatgaatat	60
gagggttttat atttaaaacc ttttagcagggt gtttatagaa gtttaaaaaa acaattagaa	120
aataacgtta tgacatttaa tgttaatggt aaggatatatt taaattcacg atttaataaa	180
cgtgaaaatt tcaaaaatgt tttagaatca gatttaattc catataaaga tttaacatca	240
agtaattatg ttgtcaaaga tccatataaa tttcttaata aagaaaaaag agataaattc	300
ttaagcagtt ataattatat taaggattca atagatacgg atataaattt tgcaaattgat	360
gttcttgat attataaaat attatccgaa aaatataaat cagatttaga ttcaattaaa	420

aaatatatca acgacaaaca aggtgaaaat gagaaatacc ttcctttttt aaacaatatt 480
 gagaccttat ataaaacagt taatgataaa attgatttat ttgtaattca tttagaagca 540
 aaagttctaa attatacata tgagaaatca aacgtagaag ttaaaataaa agaacttaat 600
 tacttaaaaa caattcaaga caaattggca gatttttaaaa aaaataacaa tttcgttgga 660
 attgctgatt tatcaacaga ttataacat aataacttat tgacaaagtt ccttagtaca 720
 ggtatggttt ttgaaaatct tgctaaaacc gttttatcta atttacttga tggaaacttg 780
 caaggtatgt taaacatttc acaacaccaa tgcgtaaaaa aacaatgtcc acaaaattct 840
 ggatgtttca gacatttaga tgaaagagaa gaatgtaaat gtttattaaa ttacaaacaa 900
 gaaggtgata aatgtgttga aaatccaaat cctacttgta acgaaaataa tgggtggatgt 960
 gatgcagatg ccaaatgtac cgaagaagat tcaggtagca acggaaagaa aatcacatgt 1020
 gaatgtacta aacctgattc ttatccactt ttcgatggta ttttctgcag ttcctctaac 1080
 ttcttaggaa tatcattctt attaatactc atgttaatat tatacagttt catttaa 1137

<210> 55

<211> 1080

<212> DNA

<213> Plasmodium falciparum

<400> 55

caggataaac ccgaagtaag tgcaaatgat gatacatcac attctacaaa tttgaataat 60
 agtttaaaat tatttgaaaa catattgagt cttggaaaaa acaaaaatat ataccaagaa 120
 ttaataggtc aaaaaagtag tgaaaacttt tatgaaaaga tattaaga tagtgatata 180
 ttttataatg aatcttttac aaattttgta aaatctaaag ctgatgatata taattcattg 240
 aatgatgaat caaaaaggaa gaaattagaa gaagatatta ataaattaaa aaaaacttta 300
 cagttatcat ttgatttata taataaatat aaattaaaat tagaaagatt atttgataaa 360
 aagaaaacag ttggtaaata taaaatgcaa attaaaaaac ttactttatt aaaagaacaa 420
 ttagaatcaa aattgaattc acttaataac ccaaagcatg tattacaaaa cttttctggt 480
 ttctttaaca aaaaaaaga agctgaaata gcgaaactg aaaacacatt agaaaacaca 540
 aaaatattat tgaaacatta taaaggactt gttaaataat ataatgggtga atcatctcca 600
 ttaaaaactt taagtgaaga atcaattcaa acagaagata attatgccag tttagaaaac 660
 tttaaagtat taagtaaatt agaaggaaaa ttaaaggata atttaaattt agaaaagaaa 720
 aaattatcat acttatcaag tggattacat catttaattg ctgaattaaa agaagtaata 780
 aaaaataaaa attatacagg taattctcca agtgaaaata atacggatgt taacaatgca 840

ttagaatctt acaaaaaatt tctcccagaa ggaacagatg ttgcaacagt tgtaagtga 900
 agtggatccg acacattaga acaaagtcaa ccaaagaaac cagcatcaac tcatgtagga 960
 gcagagtcta acacaataac aacatcacia aatgtcgatg atgaagtaga tgacgtaatc 1020
 atagtaccta tatttggaga atccgaagaa gattatgatg atttaggaca agtagtaaca 1080

<210> 56
 <211> 660
 <212> DNA
 <213> Plasmodium falciparum

<400> 56
 caggataaac ccgaagtaag tgcaaatgat gatacatcac attctacaaa tttgaataat 60
 agtttaaaat tatttgaaaa catattgagt cttggaaaaa acaaaaatat ataccaagaa 120
 ttaataggtc aaaaaagtag tgaaaacttt tatgaaaaga tattaaga tagtgatata 180
 ttttataatg aatcttttac aaattttgta aaatctaaag ctgatgatata taattcattg 240
 aatgatgaat caaaaaggaa gaaattagaa gaagatatta ataaattaaa aaaaacttta 300
 cagttatcat ttgatttata taataaatat aaattaaaat tagaaagatt atttgataaa 360
 aagaaaacag ttggtaaata taaaatgcaa attaaaaaac ttactttatt aaaagaacaa 420
 ttagaatcaa aattgaattc acttaataac ccaaagcatg tattacaaaa cttttctggt 480
 ttctttaaca aaaaaaaga agctgaaata gcagaaactg aaaacacatt agaaaacaca 540
 aaaatattat tgaaacatta taaaggactt gttaaattat ataattggtga atcatctcca 600
 ttaaaaactt taagtgaaga atcaattcaa acagaagata attatgccag tttagaaaac 660

<210> 57
 <211> 1080
 <212> DNA
 <213> Plasmodium falciparum

<400> 57
 caggataaac ccgaagtaag tgcaaatgat gatacatcac attctacaaa tttgaataat 60
 agtttaaaat tatttgaaaa catattgagt cttggaaaaa acaaaaatat ataccaagaa 120
 ttaataggtc aaaaaagtag tgaaaacttt tatgaaaaga tattaaga tagtgatata 180
 ttttataatg aatcttttac aaattttgta aaatctaaag ctgatgatata taattcattg 240
 aatgatgaat caaaaaggaa gaaattagaa gaagatatta ataaattaaa aaaaacttta 300
 cagttatcat ttgatttata taataaatat aaattaaaat tagaaagatt atttgataaa 360
 aagaaaacag ttggtaaata taaaatgcaa attaaaaaac ttactttatt aaaagaacaa 420
 ttagaatcaa aattgaattc acttaataac ccaaagcatg tattacaaaa cttttctggt 480

ttctttaaca aaaaaaaga agctgaaata gcagaaactg aaaacacatt agaaaacaca 540
aaaatattat tgaaacatta taaaggactt gttaaattat ataattgtga atcatctcca 600
ttaaaaaactt taagtgaaga atcaattcaa acagaagata attatgccag tttagaaaac 660
tttaaagtat taagtaaatt agaaggaaaa ttaaaggata atttaaattt agaaaagaaa 720
aaattatcat acttatcaag tggattacat catttaattg ctgaattaaa agaagtaata 780
aaaaataaaa attatacagg taattctcca agtgaaaata atacggatgt taacaatgca 840
ttagaatctt acaaaaaaatt tctcccagaa ggaacagatg ttgcaacagt tgtaagtga 900
agtggatccg acacattaga acaaagtcaa ccaaagaaac cagcatcaac tcatgtagga 960
gcagagtcta acacaataac aacatcacaa aatgtcgatg atgaagtaga tgacgtaatc 1020
atagtaccta tatttggaga atccgaagaa gattatgatg atttaggaca agtactaaca 1080

<210> 58
<211> 1131
<212> DNA
<213> Plasmodium falciparum

<400> 58
gcagtaactc cttccgtaat tgataacata ctttctaaaa ttgaaaatga atatgagggt 60
ttatatTTTaa aaccttttagc aggtgtttat agaagtttaa aaaaacaatt agaaaataac 120
gttatgacat ttaatgttaa tgttaaggat attttaaatt cacgatttaa taaacgtgaa 180
aatttcaaaa atgttttaga atcagattta attccatata aagatttaac atcaagtaat 240
tatgttgtca aagatccata taaatttctt aataaagaaa aaagagataa attcttaagc 300
agttataatt atattaagga ttcaatagat acggatataa attttgcaaa tgatgttctt 360
ggatattata aaatattatc cgaaaaatat aaatcagatt tagattcaat taaaaatat 420
atcaacgaca aacaagggtga aaatgagaaa taccttcctt ttttaaaca tattgagacc 480
ttatataaaa cagttaatga taaaattgat ttatttgtaa ttcatttaga agcaaaagtt 540
ctaaattata catatgagaa atcaaacgta gaagttaaaa taaaagaact taattactta 600
aaaacaattc aagacaaatt ggcagatttt aaaaaaata acaatttcgt tggaattgct 660
gatttatcaa cagattataa ccataataac ttattgacaa agttccttag tacaggtagt 720
gtttttgaaa atcttgctaa aaccgtttta tctaatttac ttgatggaaa cttgcaagggt 780
atgttaaaca tttcacaaca ccaatgcgta aaaaaacaat gtccacaaaa ttctggatgt 840
ttcagacatt tagatgaaag agaagaatgt aaatgtttat taaattacaa acaagaagggt 900
gataaatgtg ttgaaaatcc aaatcctact tgtaacgaaa ataattggtg atgtgatgca 960
gatgccaaat gtaccgaaga agattcagggt agcaacggaa agaaaatcac atgtgaatgt 1020


```
<210> 59
<211> 343
<212> DNA
<213> Plasmodium falciparum
```

[illegible]

1